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TO the love of his profession the physician should add a love of humanity.

—Hippocrates

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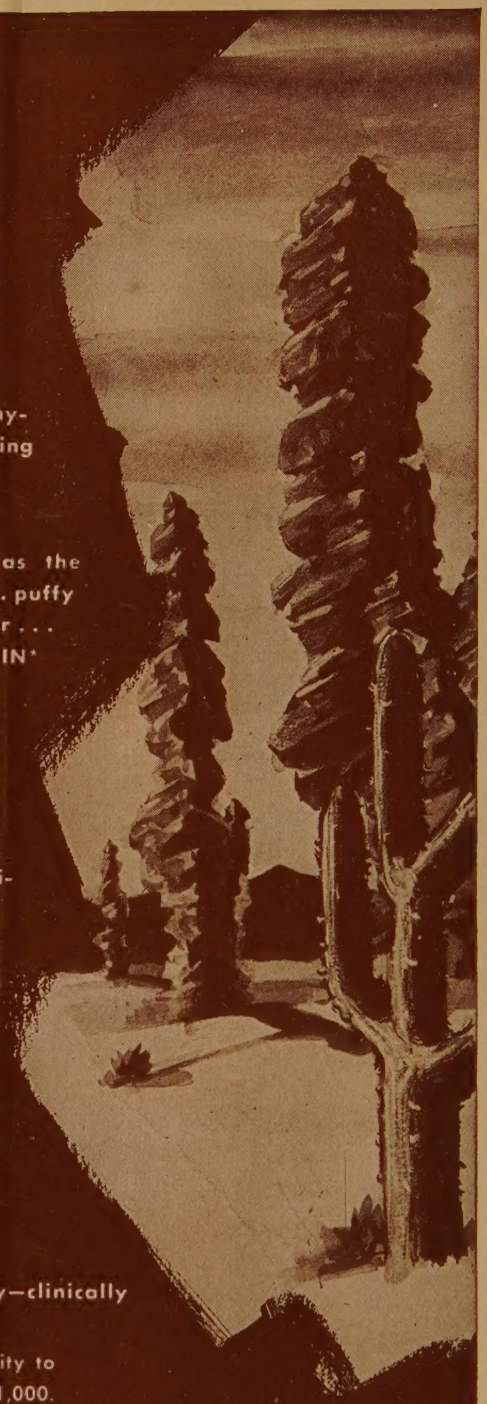
SURFACE PHENOMENA



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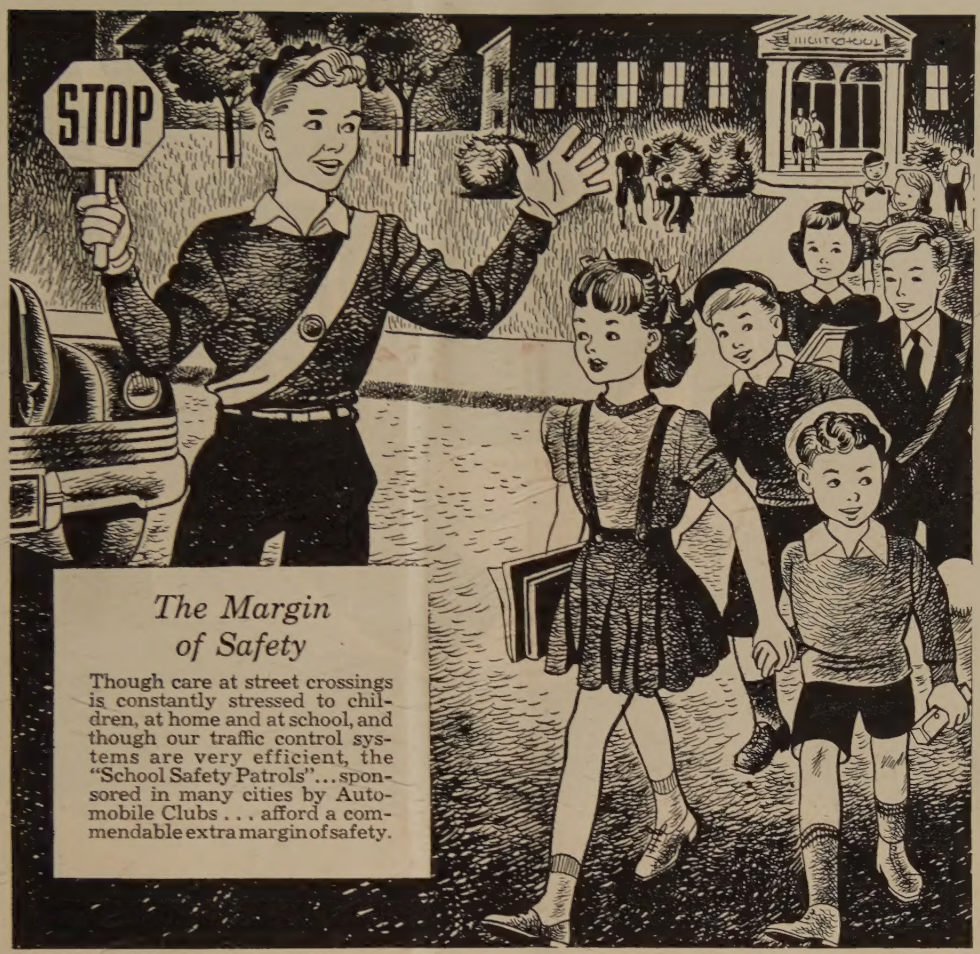
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Tropical Diseases in Britain and the United States

Owing to the fact that British, Canadian and American soldiers and other persons connected with the armed forces of these three countries had to fight and campaign in tropical lands frequently infested with carriers of jungle maladies, there has been an extremely large number stricken with tropical diseases, especially among those serving in Asia. The jungles in which some of the fighting took place or through which troops were compelled to make their way are among the worst in the world and carriers of disease abound. The wonder is that so many got through alive and in such health as to be able to fight vigorously. Many were afflicted with the maladies of the jungle, however, the most prevalent of which were the various forms of malaria. In many respects, this Asiatic Campaign was the most extraordinary ever undertaken. If it had not been that the soldiers and followers were supplied with food and medicine by the agency of airplanes, this campaign would have been impossible. The white portion of these almost cosmopolitan forces suffered more severely than the Indian contingent which, by the way, included some of the finest fighting men in the world. The Ghurkas in proportion to their numbers won more Victoria Crosses than any British or Australian regiment or division. No doubt the American contingents were harrassed badly by malaria and akin diseases. Now malaria in any form is a disease which leaves its mark, frequently for life. In most cases it is apt to recur while it deprives the system of a great deal of its vitality and leaves it open to recurrences and attacks of other diseases. Its treatment has been more effective than ever before, but it should be prevented to a very large extent by more effective control of the offending mosquito.

A new hospital for tropical diseases is to be built and equipped in or near London, and plans for such an institution of one hundred and fifty beds are well advanced. The patients at this new hospital will be British men and women who have been invalided home or who when they returned home were found to have one or other of the tropical diseases. At present there are many more cases than in normal times, because of the recent return of large numbers of people from the Far East to England.

The primary object of this institution will be to treat patients, but it will also serve as a clinical division for the London School of Hygiene and Tropical Medicine and will therefore probably be erected near the school. Such an establishment would centralize tropical postgraduate teaching in Britain, and a continual flow of doctors thus assured for the tropics, fully qualified to treat tropical disease. The Imperial Hospital for Tropical Diseases is the name proposed for the new hospital, but this has not been decided. It is to be hoped that this plan will materialize as it would fill an obvious need and would also be the means of teaching the ins and outs of tropical diseases treatment to those who intend to practice in the tropics.

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Open Forum

Phenothiazine Story

T. SWANN HARDING
Falls Church, Va.

The story of the remarkable drug, phenothiazine, was told to the writer recently by Dr. Floyd DeEds, in the pharmacological laboratory of the Bureau of Agricultural and Industrial Chemistry, which he heads. The laboratory is located in but does not form an administrative part of the Western Regional Research Laboratory of the same bureau in Albany, Calif., one of four huge research institutions devoted to the finding of new uses for agricultural surpluses, culls, and byproducts, especially in industry.

The aforesaid pharmacological laboratory was originally founded in Washington because the problem of toxic residues on fruits and vegetables offered the Department of Agriculture an increasingly important problem. It seemed that the more effective the insecticides were for purposes of insect control the more likely poisonous residues were to remain on sprayed fruits and vegetables, which would bring the Food and Drug Administration into the picture as a minatory agent.

So study was directed to the finding of insecticides, preferably of an organic nature, which would be highly poisonous to insects but relatively harmless to human beings. Since rotenone was one of the results of this research, the bureau probably paid its expenses right there for most of its existence, if you ignore the $100,000,000 penicillin industry it founded later and a thousand and one other research projects it has carried on which have had stupendous monetary value to the American public.

Phenothiazine was another of the materials studied in the effort to find a suitable organic insecticide, specifically to replace objectionable lead arsenate used to control the coddling moth. For your information a coddling is a young apple and the moths can raise hob with the crop. Phenothiazine proved effective for the purpose. It was free from health hazards as it did not leave toxic residues on the fruit. But tremendously more important, significant, and wholly unexpected results flowed from this investigation.

How research builds up into ever new results always makes a fascinating narrative. The unexpected and the unearned increment from each project often amounts to more than achievement of the original objective. The insecticide division of the Bureau of Entomology and Plant Quarantine, having shown phenothiazine to be an excellent substitute for poisonous inorganic insecticides, detailed toxicity studies were required to establish its relative harmlessness to human beings. These the pharmacological laboratory undertook.

As a result of these studies the safety of the product as an insecticide was demonstrated, the cause of untoward reactions on orchard workers using the stuff as a spray was discovered, the compound was shown to have unique value as a urinary antiseptic and an anthelmintic, and finally it was proved to have both bactericidal and fungicidal properties. The story is not yet ended but even so far it bulks large if only purely monetary considerations are envisaged.

Possibilities of chronic poisoning by phenothiazine were tested out by long-time feeding of the substance to albino rats. Various concentrations of the drug were used with a nutritionally adequate diet. No retardation of growth appeared until amounts were fed greatly in excess of any quantity ever likely to be left on food as a spray residue. There was no histological evidence of tissue injury. While single or continued *excessively high* doses of phenothiazine would cause a temporary secondary anemia, this rapidly cleared up without injury when the drug was discontinued.

During these experiments, however, a curious observation was made. Somewhere and somehow along the experimental line the white fur of the rats changed to brick red. The depth of color was roughly proportional to the quantity of drug administered. But when the fur was rolled back it was evident this did not come from inside the animal as only the ends of the hairs were stained. Obviously a red dye must be excreted in the urine of rats dosed with phenothiazine. This wetted the shavings serving as their bedding and dyed their fur. Proof was had by collecting the urine and using it to dye hair from normal albino rats.

The next step would, of course, be to isolate sufficient of the dye to analyze and identify it. That required the collection of rat urine over a period of weeks. Since the whole idea was to isolate the red dye no effort was made to inhibit bacterial growth in the urine by use of a preservative. Despite this there was no bacterial growth in the urine, a remarkable thing when you think of it.

Phenothiazine was present in solution in the urine; it could be precipitated with hydrochloric acid. Only a small quantity was present as such, however, the rest being in reduced form as leucophenothiazine or in conjugated form as leucophenothiazone. A relatively large quantity of thionol was present, partly in the reduced form as leucothionol and partly in the conjugated form. The discovery of the presence of two oxidation-reduction dye systems in the urine was significant.

Phenothiazine was the parent substance of these dyes, as well as of Lauth's violet, methylene blue and a number of related dyes known to possess bactericidal properties. On a basis of relative solubility the bactericidal properties were assigned here to the oxidation products rather than to phenothiazine *per se*. Tests on rabbits indicated that animals fed phenothiazine passed urine of extremely low bacterial count. Yet urine from untreated rabbits lacked bactericidal properties.

The red dye, thionol, isolated from the urine of rabbits dosed with phenothiazine showed bactericidal action against Staphylococcus aureus, obtained from a patient with bacteremia. Next the urine of living rabbits was contaminated with Eschericha coli via a catheter while in the bladder. Samples of urine

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removed 24 hours later were highly infected and of high count. But when phenothiazine was administered to the animals gastrically the urine count dropped to nothing very quickly.

Through the cooperation of Dr. A. B. Stockton, Department of Medicine and Pharmacology, Stanford University School of Medicine, trials were made on nearly a hundred human patients. As a result a public service patent was granted on the use of phenothiazine as a urinary antiseptic, and commercial production of the drug for therapeutic purposes began. A further public service patent was granted on the preparation of thionol by direct oxidation with hydrogen peroxide in dilute acid alcohol solution.

Next, E. F. Knipling, of the Bureau of Entomology and Plant Quarantine demonstrated the effectiveness of using phenothiazine internally to prevent the development of hornfly larvae in feces. State veterinarians meanwhile decided to test the drug for the treatment of urinary tract infections in domestic livestock. Paul D. Harwood and associates of the Bureau of Animal Industry, demonstrated the efficacy of the drug for the removal of ascarids and nodular worms from swine.

After that the anthelmintic action of phenothiazine assumed such importance that millions of dollars were saved by livestock growers and the production of the drug became an important commercial industry. Today phenothiazine is regarded as quite as important a development in veterinary medicine as the sulfa drugs or penicillin in human medicine.

Meanwhile individuals who used the drug in orchard sprays began to display unusual symptoms of sunburn, chemical burn, or dermatitis. Dr. DeEds and his associates, knowing the fate of the drug in the body, were soon able to show that the annoying condition resulted from photosensitization caused by the quantities of the drug the sprayers unavoidably inhaled or swallowed. Remedial and preventive measures were quickly put into practice.

Subsequent investigation by Goldsworthy and Green indicated that phenothiazine had fungicidal properties. Actually this effect was later shown to be due to the development of a phenothiazine oxidation product, phenothiazone. This was formed under suitable weathering conditions and the process was accelerated in mixtures of phenothiazine, lime, and bentonite.

The use of phenothiazine to control livestock parasites, with a powerful indirect effect on human health, overshadows its other values. By 1943, three million pounds of the drug were produced commercially. It is well adapted to various methods of use, including labor-saving self-medication. Standard doses may be given in capsules, or mixed in feed, or incorporated in homemade drenches. A wettable form of the drug has been produced especially for the last-named method of administration.

Prior to January 1, 1944, approximately nine hundred articles had appeared on the use of phenothiazine as an anthelmintic. An abstract in the supplement to the *Journal of Parasitology,* December 1938, began the procession. During the war surgical supplies were stabilized by the fact that phenothiazine rid sheep of the nodular worms which render their casings unfit for use in making sutures. Finally, the research on the drug cost just $10,000, but is worth $10,000,000 each and every year to stockmen. More recently it has been shown that the use of phenothiazine against sheep parasites prevents annual losses of a million dollars in the State of Kentucky alone.

Andreas Vesalius

Recognizing the highly significant part played by the medical services in this and in former wars, the Historical Library of Yale University School of Medicine arranged last year for the publication of a life of Andreas Vesalius, the great military surgeon and one of the most important figures in medicine of all time. During the inclement winter of 1544, Vesalius served with the armies of Charles V in the Marne Valley, at Soissons, Château Thierry, and the Argonne. His biographer, the late Dr. Harvey Cushing (Yale 1891), had struggled in the same terrain in the last war, and he dedicated the energies of the last years of his life to the portrayal of the life and work of Vesalius, foremost among the founders of modern medicine.

Plans had been laid to celebrate the four hundredth anniversary of Vesalius' birth in 1914, but the war prevented the observance and the Louvain Library, which contained many of the most important relics of the great Belgian anatomist, was destroyed. It is highly fitting, therefore, that the Historical Library at Yale, where Dr. Cushing's great Vesalian collection is housed, should have been able not only to celebrate, as it did on October 30th, 1943, the four hundredth anniversary of Vesalius' book *On the Structure of the Human Body,* but also to publish Dr. Cushing's *Bio-bibliography of Andreas Vesalius* (issued by Schuman's in New York).

In acknowledging assistance which had come from Dr. W. W. Francis of the Osler Library in Montreal, Dr. Edward Clark Streeter, Curator of Museum Collection of the Yale Medical Library, and Dr. Arturo Castiglioni, research associate in the History of Medicine and formerly professor of medical history at Vesalius' own University at Padua, Dr. Fulton in his Preface comments as follows:

"Because of his knowledge of anatomy Vesalius undoubtedly found himself better equipped to deal with war injuries than many of his contemporaries, xcepting of course, Ambroise Paré who, like many surgeons of 1943, had learned anatomy the hard way—in the field of battle. For these, and many other reasons, we have persevered in bringing out the Vesalius bio-bibliography in 1943, at a time when physicians on every battle front will undoubtedly welcome a reminder of the man who at the early age of twenty-eight years first adequately portrayed the fabric of the human body. When the lights burn low and tradition falters, we must carry the torch of remembrance until it can flame again and brighten the paths of learning and free thought for those who now 'sit in darkness and in the shadow of death'."

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The First Postmortem in Canada

I venture to think that the story of the first postmortem in Canada will be of interest to medical men—Canadian medical men at least. I take the story from the July 1943 number of *Le Bulletin des Recherches Historiques,* the official organ of the Department of Archives of the Province of Quebec and I shall translate as literally as the idioms of our languages permit.

On the second visit of Jacques Cartier to this continent, 1735-1736, we are told that in the winter scurvy took off twenty-five of his people; and that to determine what was the strange disease that took away so many of his people he opened the body of one of them, Philippe Rougemont.

He says: "There was found that he had the heart all white and shrivelled and surrounded by more than a pot of water, red as a date; the liver was normal but the lung was all blackened and mortified, and that it had sent all its blood below the heart for when it was opened up a great quantity of black and infected blood rushed out. So, too, the spleen on the part toward the spine was a little broken for about two inches, as though it had been rubbed on a rough stone". The author of the article, the well known archivist, M. Pierre—Georges Roy, adds, "It is easy from this passage to recognize that the companions of Cartier suffered from scurvy. This disease later brought death to the companions of de Roberval, of M. de Monts, of Champlain. It is known that the Indians recommended a remedy for scurvy to Champlain."

Hon. William L. Riddell

Fifteenth Anniversary of Washington Institute of Medicine

The year 1946 marks the fifteenth anniversary of the Washington Institute of Medicine, according to a recent statement made by the Institute's president, Henry J. Klaunberg, Ph.D.

Founded in Washington in 1931 as a membership association devoted to medical bibliographical research, the Institute utilizes the facilities of the Army Medical Library, the largest medical library in the world. Its staff has achieved world-wide recognition for its research on numerous special projects conducted not only for its members, but for many medical and scientific organizations, some of them of international calibre.

Now, however, the Institute makes its greatest contribution to medical progress by means of its unusual *Quarterly Review* publications, which have quickly achieved world-wide recognition. In these journals, the results of the Institute's comprehensive program of library research are made available to the entire medical profession. Each of these quarterlies covers one specialized field of medicine, and is edited by a board of authorities in that field, who provide authoritative abstracts and thoughtful commentaries on all noteworthy advances published in the medical literature of the entire world.

Th oldest of the group, the *Quarterly Review of Obstetrics and Gynecology*, was first published in 1936 (under the name, "Obstetrics-Gynecology Survey"). This was soon followed by *Quarterly*

Toward a Better World

ATOMIC ENERGY FOR PEACETIME USE, according to good authority, will probably be a reality within five to ten years . . . first, perhaps as motive power for ships . . . fast spreading to yet undreamed of scientific wonders for the benefit of mankind.

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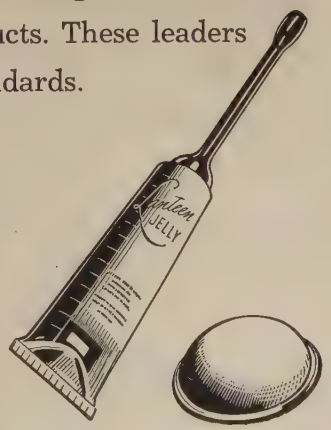

L A N T E E N

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Reviews covering other specialized fields, including otorhinolaryngology and broncho-esophagology; surgery; medicine; ophthalmology; ptdiatrics; and urology. A ninth quarterly, *General Practice Clinics,* reviews advances in the fourteen special fields of greatest concern to the general practitioner. Additional *Quarterly Reviews* in other special fields are being planned for appearance in the near future.

John and Mary R. Markle Foundation

Grants of over $486,000 for the study of tropical diseases, virus diseases, biochemistry, nutrition, physiology and other subjects in the field of medical and physical sciences, made by the John and Mary R. Markle Foundation during 1945 have been announced. The grants include appropriations to sixty-two universities, medical schools, research institutes, schools of public health and other research agencies. The largest grant, amounting to $50,000 was made to the Committee for Research in Endocrinology of the National Research Council, whose work the Foundation has supported for ten years. Among other institutions that received appropriations are the Columbia University College of Physicians and Surgeons, which was given $27,386 for research in the chemistry and physiology of blood coagulation, for studies of enzymes which regulate hypertension and allergic states and of the physiology of premature and newborn infants, and for other research. Grants totaling $23,400 were made to the Harvard Medical School for research which included studies of human burns and traumatic shock, the mechanism of human hypertension, and the destruction of red blood cells in hemolytic anemias. The Public Health Research Institute of the City of New York was given $10,000 for the study of immunity in malaria. The University of Chicago received $20,000 for research in the mechanisms of carbohydrate oxidation and for a study of the toxins of the meningococcus organisms.

Other appropriations made for research include $27,400 to Cornell University Medical College, $3,200 to Duke University, $6,000 to Johns Hopkins University School of Medicine, $24,340 to New York University College of Medicine, $10,800 to Northwestern University Medical School, $7,000 to the Ohio State University College of Medicine, $8,000 to the University of California, $25,800 to the University of Minnesota Medical School, $27,210 to the University of Texas School of Medicine, $5,200 to the University of Toronto, $5,000 to the University of Vermont College of Medicine, and $8,600 to Western Reserve University School of Medicine. In summarizing the medical research supported by the Foundation during the period 1936-1945, the report states that 627 grants were made toward 336 projects, involving appropriations aggregating nearly $4,150,000. During the year, 180 reports based on research aided by the Foundation were published.

Dr. John A. Ferrell retired on July 1st as medical director of the Foundation, and John M. Russell, former assistant to President James B. Conant of Harvard University, will become executive director.

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Inter-American Health Program in Guatemala

Malaria is a leading cause of illness and death in Guatemala, and the Inter-American Health Service, made up of nine United States health workers and a number of Guatemalan doctors, and public health officials, has been carrying on an extensive campaign to control the disease.

The Service has also been fighting to stop the spread of deadly typhus fever, promoting community sanitation in Guatemalan towns, and working to provide safe water supplies. It has set up six modern health centers in key cities to practice preventive medicine and educate the people in health problems, has built an up-to-date maternity center in Guatemala City, and completed the exterior of the big Roosevelt Hospital in the capital. It has been recommended that this health program be augmented by a network of twenty-seven modern hospitals. It has also proposed that the plans for Roosevelt Hospital, originally designed as a one thousand bed institution, be expanded to make it the nucleus of a national medical center. This center would include an eight hundred and fifty bed general hospital, a one hundred and twenty bed maternity hospital, a pediatrics building and, in other buildings, a combined nurses home and school for three hundred women, an auditorium for health education, a medical training center, and a medical library. Tuberculosis pavilions and a mental health hospital will be added to the group in the future.

The group of United States technicians working with the joint health organization is headed by Mr. Samuel T. Drew, Boston, Mass., with Dr. Henry W. Kolbe, New York, in charge of the medical aspects of the program and Mr. Felix Lamela acting as hospital consultant in the development of the hospital program.

National Society for Medical Research

The National Society for Medical Research, a clearing house for information on medical studies and discoveries, has been organized under the sponsorship of the Association of American Medical Colleges with the cooperation of one hundred and one national scientific organizations.

Dr. Anton J. Carlson, professor emeritus of physiology at the University of Chicago, is president of the Society; Ralph A. Rohweder, former consultant and editor for the National Safety Council, has been appointed executive secretary. Dr. A. C. Ivy is secretary-treasurer of the Society and on the board of directors are representatives from the leading medical colleges and organizations of the United States. The Society's headquarters are at 25 East Washington Street, Chicago, Ill.

The society has as its purpose the advancement of research in medicine, biology, pharmacy, dentistry, and veterinary medicine. Dr. Carlson emphasized that an important function would be to analyze and expose the propaganda of small groups which object to the use of animals in the experiments without which medical science would still be in its infancy.

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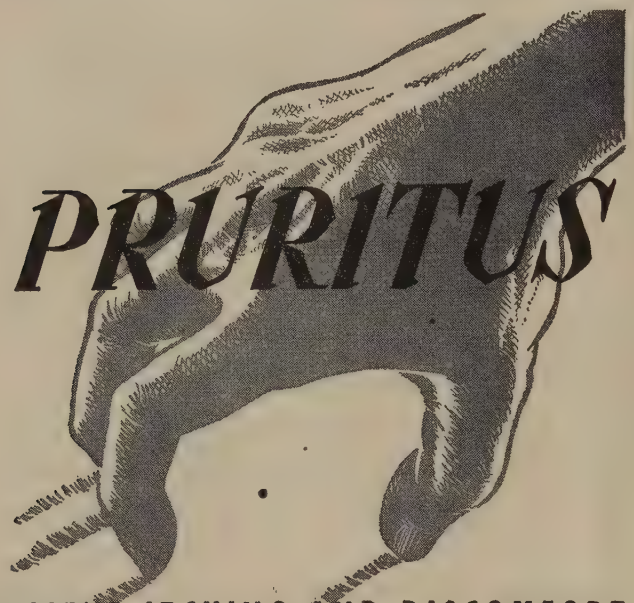

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Bicycle Accident Fatalities

The *Statistical Bulletin* of the Metropolitan Life Insurance Company (February 1946) states that the growing enthusiasm for bicycling has been accompanied by an increasing number of fatalities. Statistics are presented, based on experience among policy holders of the Company, which show the trend of mortality from bicycle collisions with automobiles.

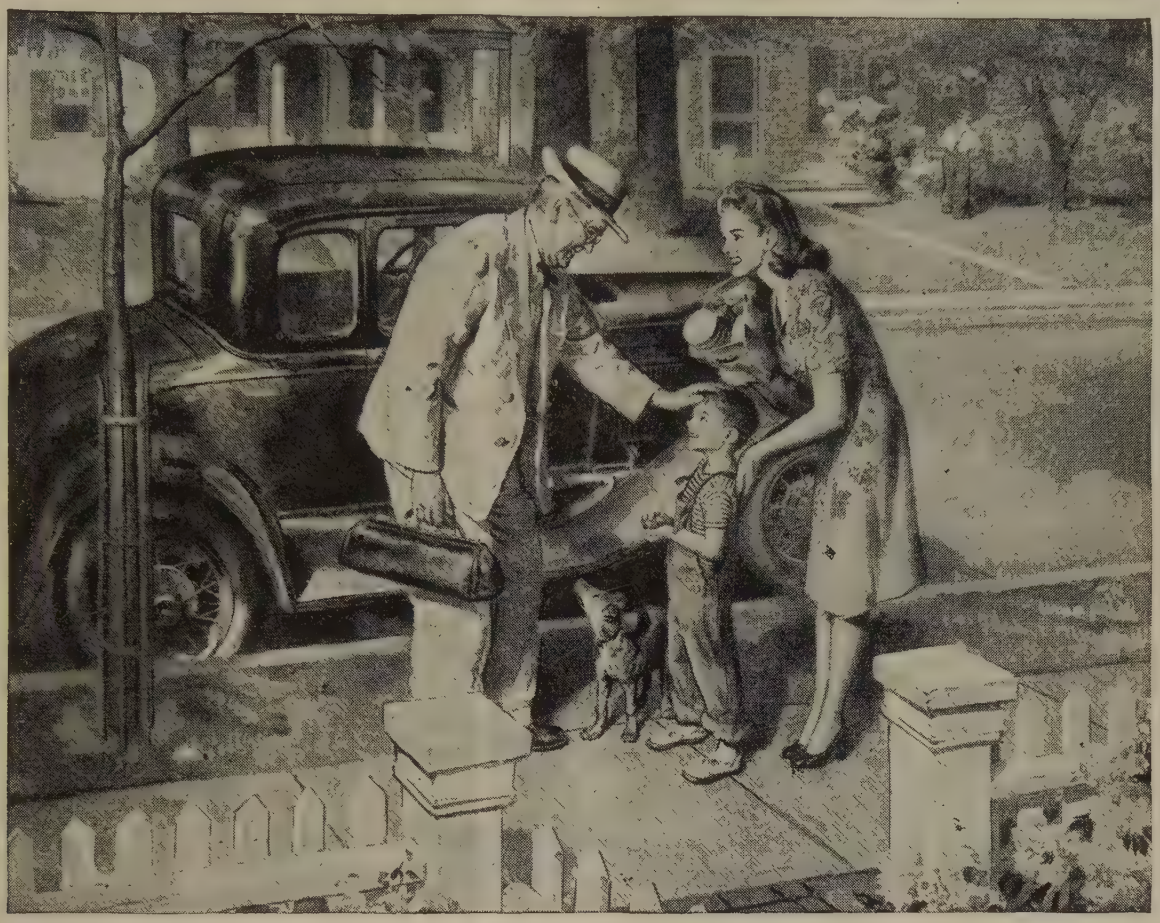
In the years 1932 to 1935, the death rate from this cause among insured males ranged between 4.9 and 6.3 per million policyholders (ages one to seventy-four years). The mortality then rose rather sharply, reaching a maximum of 12.9 in 1941. The wartime restrictions on driving, caused the rate to drop to 5.0 per million male policyholders in 1944, the level of about a decade ago. A parallel trend is observed in the general population of the United States. In 1933 there was a total of about four hundred deaths in this country from collisions between bicycles and automobiles. The number of fatalities increased steadily, and by 1941 exceeded nine hundred. Wartime falling off in motor traffic brought the toll down again to about four hundred in 1944.

These figures cover only those accidents to cyclists in which the death was due to a collision with an automobile; they account for about four-fifths of all deaths from bicycle accidents. The remaining fifth results largely from falls off bicycles and from bicycles running into streetcars or fixed object. Boys in the teen ages contribute the largest part of the annual toll. Among Metropolitan Industrial policyholders, the death rate from this type of accident was more than five times as high among boys of ages ten to nineteen as among men ages twenty to sixty-four years, even in prewar years; during the war period the ratio was ten to one. The disparity is greater still when the mortality for adults is compared with that for children in the ages between thirteen and sixteen. Among girls and women, fatalities from bicycle accidents are comparatively infrequent.

Cardiovascular Research

The Life Insurance Medical Research Fund announces the award of nine fellowships, totalling $23,000, for postgraduate research and student training in diseases of the heart and arteries, and eleven new grants, totalling $162,000, to ten institutions for research in this field. These grants and awards bring to $621,000 the allocations for research made by the Fund since it started operation last fall. Dr. Francis R. Dieuaide, scientific director of the Fund, said that two types of fellowships were granted. The senior fellowships are given to graduates who have a doctor's degree in medicine or the related medical sciences, and junior fellowships to undergraduate students in medical schools who desire to take an extra year for training in scientific research. It is expected that additional fellowships will be awarded later this year.

Of the nine fellowships recently awarded, four were for postgraduate research into cardiovascular diseases and five were given to medical students for training and research. Eight of the eleven new



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Not all his calls are associated with illness. He is often friend and counselor . . . he is present when life begins, watches it flourish and develop. His satisfactions in life are reflected in the smiling faces of youngsters like this one above, and of countless others whom he has long attended.

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grants are for study of the physiology of circulation or circulatory dynamics. The institutions to whom the grants were made are Children's Hospital, Philadelphia; Columbia University, New York; University of Southern California, Los Angeles; Emory University, Atlanta; Long Island College of Medicine, Brooklyn; University of Pennsylvania, Philadelphia; University of Texas, Galveston; Tulane University, New Orleans; Wake Forest College, Bowman Gray School of Medicine, Winston Salem, N. C.; Yale University, New Haven.

The postgraduate fellowships to be available in 1946 were made to: Dr. Louis Horlick, Dr. J. Haskell Milstone, Yale University School of Medicine, Dr. Roy L. Robertson, Emory University School of Medicine and Dr. Kenneth F. G. Savard, University of Montreal School of Medicine.

Nutrition in War and Peace

Dr Robert S. Goodhart, scientific director, The National Vitamin Foundation, New York City, discussed nutrition in war and peace at the annual meeting of the American Pharmaceutical Manufacturers' Association. The consensus of nutrition and health authorities, who had studied the problem, he said, was that the general health and nutritional status of the populations of the United States, Canada and Great Britain probably had improved during the last war, despite shortages of food, housing and medical care and an increase in working hours, congestion and other factors that adversely affect living conditions was in sharp contrast to the situation which existed during the first World War, which period, according to the Mixed Committee on Nutrition of the League of Nations, "afforded a striking demonstration of the effects of a deterioration in diet, when other factors (housing, sanitation, medical knowledge, etc.) were practically unchanged. The general death rate, and especially the death rate from tuberculosis rose in all countries (belligerent and others) where food restrictions were imposed on the population."

During the interval between the two wars, many important technical advances were made in the fields of food production, processing and transport, making it feasible to plan and execute food programs on a national and international scale to an extent not possible during World War I, but the relatively good health record of the English speaking countries during the second World War would not have been experienced had it not been for the progress made in the science of nutrition, and in nutrition education, prior to and during the war. World War II saw the science of nutrition become a major factor in determining and shaping food production, distribution and consumption programs for both our armed services and for civilians.

The influence of the science of nutrition upon wartime food supplies and eating habits was readily recognized, he said, not only in English speaking countries but also in Germany and Japan, where the nutritional concepts of the administrators of the national food programs were definitely primitive, there was noticeable concern in both official and unofficial circles with the nutrient content of the diet. In both of these countries, the adequacy of the ration and of the diet was officially determined on the basis solely of their calorie, fat, protein and carbohydrate contents. However, in Germany, vitamin supplements were distributed to children and pregnant women, industrial and mine workers, and special allowances of protective foods, such as milk and butter, were allowed on certification of need by physicians. In Japan, also, vitamin preparations were widely used by civilians and the military; and certain scarce foods, such as evaporated milk, were restricted to especially vulnerable groups. Never the less, because of the tight food situation and because of the lack of any real national nutrition program, the incidence and severity of nutritional deficiency diseases increased during the war in both countries.

"The fact that the nutritional quality of the American diet was well maintained during the war is no reason for complacency. Nutritional deficiencies are prevalent in this country, and there is a marked difference between that state of nutrition just sufficient to prevent the development of obvious deficiency diseases and that of optimum nutrition. It has been shown that the nutrient content of the diet has a profound effect on growth, on learning ability, on the capacity for physical work, on resistance to infections, on the efficiency of pregnancy and parturition, on the ability of the mother to nurse her children and on longevity. No one factor so affects our health as the food we eat."

Medical Administrators for Veterans' Hospitals

As part of a comprehensive plan to give New York State veterans the best possible medical care, medical administrators will be assigned to all Veterans Administration hospitals in New York State, with the exception of the 50-bed hospital at the Saratoga Springs Spa, and medical administrative officers will be appointed to all Regional Offices, according to a recent announcement. In the hospitals, the medical administrators, assisted by trained registrars, will deal with all phases of hospital operation except actual medical care. Their work will involve supply, finance, utilities, records, food service, personnel, recreation and entertainment, thus leaving the medical staff free to use their professional skills and to increase them by study and research.

The appointment of medical administrators has already been made for the 2800-bed neuropsychiatric hospital at Northport, L.I., and the two thousand-bed general medical and surgical hospital in the Bronx. A third administrator will soon report for duty at the combined hospital and home at Bath.

Candidates are also in training for assignment to the Veterans Administration tuberculosis hospitals at Castle Point and Sunmount, the Canandaigua neuropsychiatric hospital, and the general medical and surgical hospital at Batavia. Training for these assignments is intensive and thorough, and is designed to give the candidates a competent understanding of specialized hospital administration, Veterans Administration procedures and the legal aspects of veterans' medical care.

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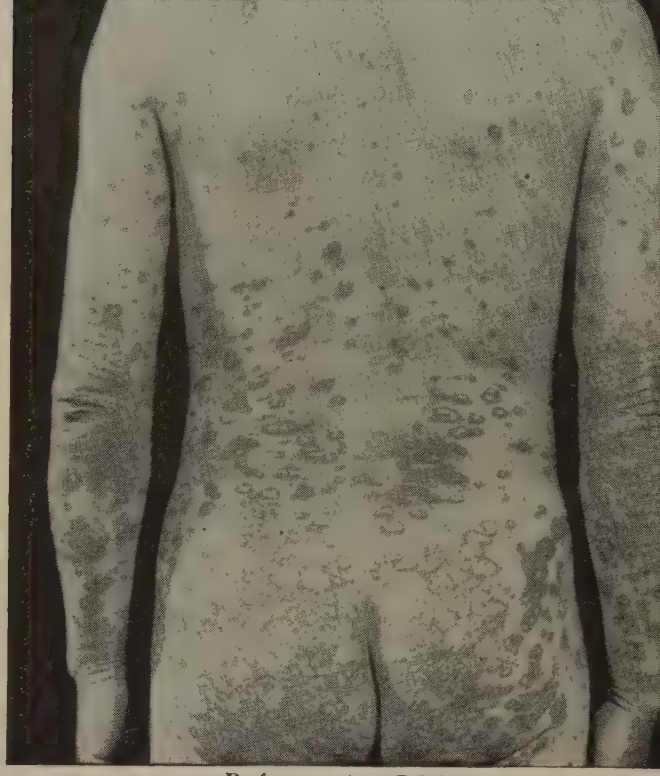

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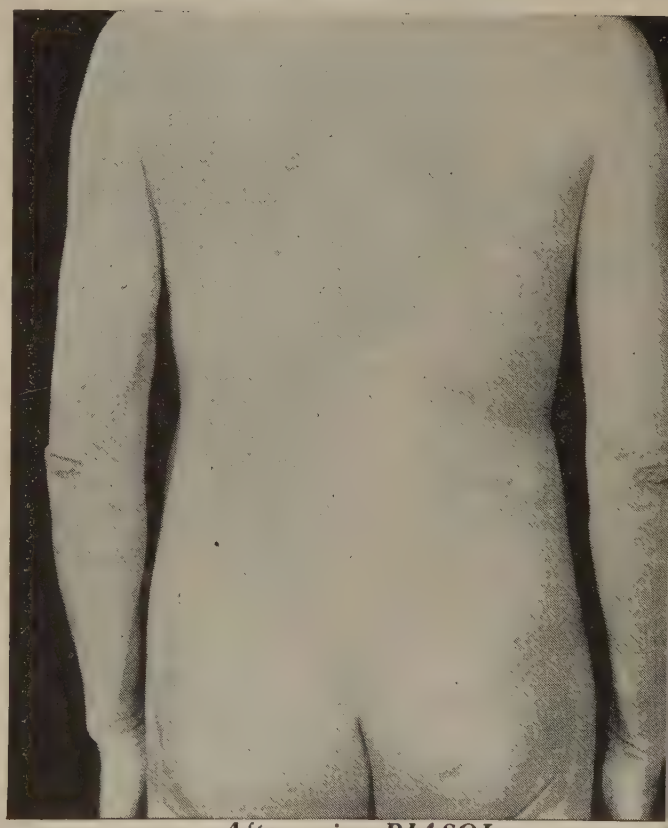

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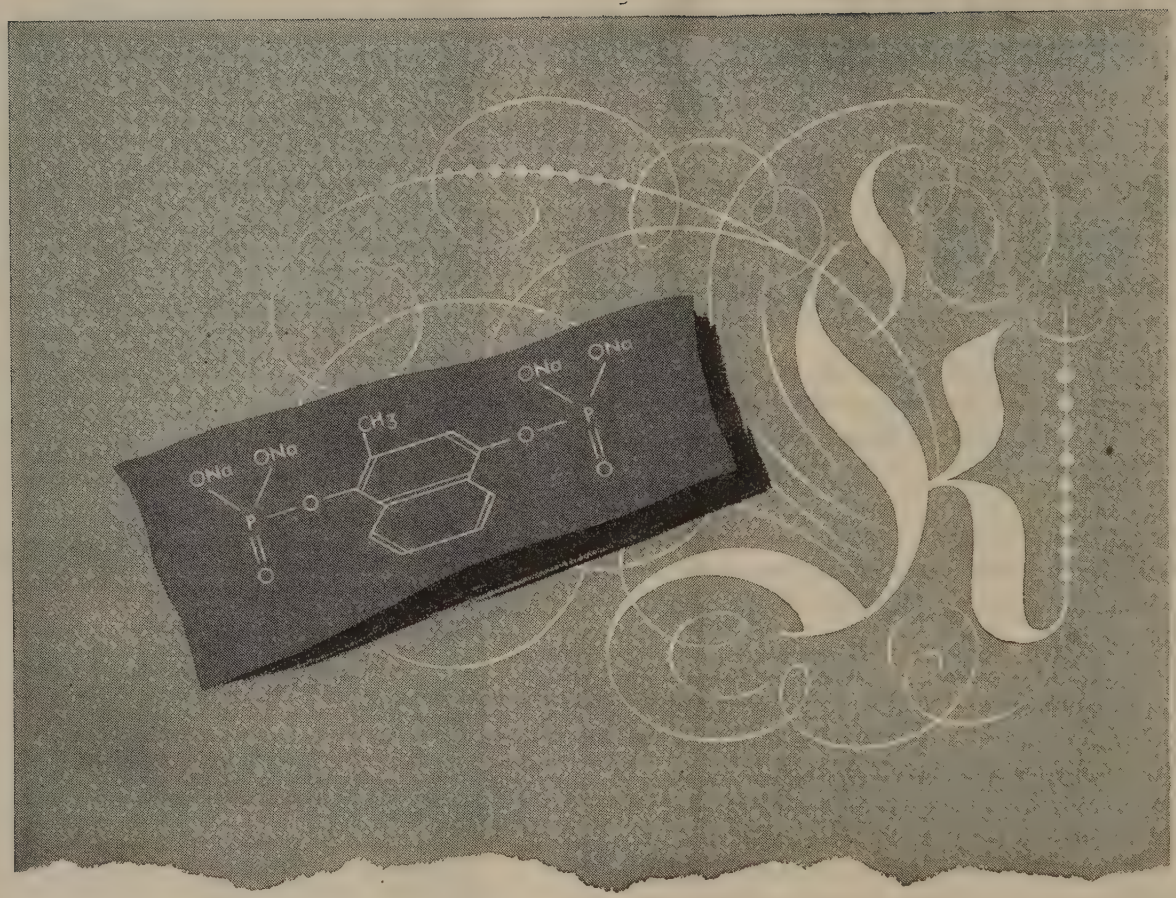

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RECENT RESEARCH ON CHOLERA

A Short Summary

SIR JOHN TAYLOR, M.D., D.P.H.

London, England

The period from 1932 to 1940 was one of renewed activity in research on cholera in India and the investigations carried out, in association with laboratories in England engaged in basic studies on the vibrios, have resulted in definite advances in our knowledge of the disease. The necessity for these investigations was emphasized by certain occurrences in connection with the pilgrimage to Mecca. At the quarantine station of El Tor a routine bacteriological examination of the stools of the pilgrims returning from the Hedjaz is carried out and in 1930 vibrios were isolated from forty-six out of 20,700 examined. Certain of the strains were diagnosed as "agglutinable" with the sera used for the tests. The pilgrimage was accordingly declared to be infected and the quarantine measures applicable were put in force. The pilgrimage had been free from cholera since 1913 and no cases occurred in the Hedjaz during 1930 or in Egypt on the return of the pilgrims, or after their final dispersal. Under the circumstances the question was raised as to whether the vibrios isolated were correctly diagnosed as Vibrio cholerae. On submitting the strains to serological test, by means of the agglutinating sera in routine use for the purpose in a number of laboratories in different countries, a marked discrepancy in the findings was shown and it appeared that the identification of Vibrio cholreae was not on a sound basis.

In view of these facts the Office Internationale d'Hygiene Publique, which was specially interested in the matter in regard to quarantine control, constituted a cholera committee to go into the subject. It was considered necessary that the serological diagnosis of Vibrio cholerae should be reinvestigated and that, if possible, the term agglutinability as applied to Vibrio cholerae should be defined in such a manner as to ensure that all laboratories should interpret it in the same way. A project was put forward for the preparation of a standard agglutinating serum and work on the subject was undertaken by Madsen and Cantacuzene. Two agglutinating sera were prepared and distributed for trial to laboratories in different parts of the world including those in endemic and epidemic areas that would be able to carry out tests on strains recently isolated under known conditions in relation to the occurrence of cholera. Tests were carried out on a very large number of strains and a complete documentation on the work was published in the Bulletin of the Office Internationale d'Hygiene Publique (1934).

The point of special importance which emerged from certain of the reports on the tests was that the sera depended for their action largely on their H agglutinins and that many of the strains tested which were agglutinable when unheated suspensions were used were not agglutinated in heated suspensions. Strains of which boiled suspensions were agglutinable could be sharply differentiated. It appeared that many strains in the series under test possessed O antigens which were not represented in the test sera while their H antigen was the same as that of strains on which the O agglutinins in the sera acted. The presence of a common H antigen in vibrios of different O types was indicated and such would not be differentiated by the use of sera containing H agglutinins.

In view of these findings the Cholera Commission of the Office Internationale d'Hygiene Publique expressed the opinion that the project for the preparation of a standard agglutinating serum could not be realized at the time. It was also considered that further investigations were required to clear up the following points:

(a) Are vibrios of different serological types found in cases of clinical cholera and, if so, how can they be distinguished from each other?

(b) If it is possible to distinguish such types, what are the characters of the clinical types to which they pertain and their epidemiological role?

New Work on the Serology of the Vibrios

The importance of cholera to the British Empire and particularly to India, where one of the major endemic centres is situated, made it essential to continue the investigations. A new phase of research was initiated as the result of a meeting of Public Health and laboratory workers held in London in 1935. A proposal was brought forward by P. Bruce White of the National Institute for Medical Research, Hampstead, for the preparation, not of a standard serum, but of a standard O antigen. It

was intended that this should be prepared in the form of a dried powder to serve as a stable reagent for the immunization of animals and the production of agglutinating sera free from H agglutinins. The proposition was agreed to and A. D. Gardner of the Standards Laboratory, Oxford, undertook to cooperate in the work of selection of strains and in testing the characters of sera raised by means of the antigen.

It was considered advisable that before a general issue of the dried antigen should be made extensive tests of the value of sera prepared by its use should be undertaken. The director of the Central Research Institute, Kasauli, Punjab, was asked to arrange for the trials as India was in a position to obtain abundant material for test and an organization for research on cholera on a large scale was already in existence in India.

In the course of preliminary work Gardner and Venkataraman (1935a) in the examination of a series of forty-seven vibrio strains from different sources classified a proportion of them in six different O serological groups. The remainder were unclassified and may have been of individual types. They placed vibrios which on all counts could be considered to be Vibrio choleræ in their O group I. The validity of the types which have been designated the "original" and the "variant" type of Vibrio cholerae was also reinvestigated and it was found that these possessed a common group O antigen and, in addition, a type specific O antigen characteristic of the respective type. The type strains are respectively the Inaba and the Ogawa strains and these names have been retained for the types and the antigens prepared from them. Occasional strains were found which possessed all three O antigens. These form the "intermediate" type of which the type strain is Hikojima (Gardner and Venkataraman (1935b). Dried O antigens of both the Inaba and Ogawa types were prepared and sent to India with information as to experience of the preparation of sera by their use.

It had been found in England, and this was also confirmed in India, that on immunization of rabbits with either type of antigen the sera produced agglutinated strains of both types. In many cases an equal titre was shown or only a slight difference, and only a few rabbits in a batch gave differential titre to the degree shown by agglutination of the heterologous strains to 25 percent of that of the homologous strain. Such sera were of use for the differentiation of Inaba and Ogawa strains but for certain purposes it was found advisable to absorb the serum with the heterologous strain in order to obtain a serum which would contain agglutinins only for the type specific fraction. When the antigens were received in India in July 1935 five teams of research workers located in different parts of India were engaged in investigations on different aspects of cholera. It was arranged that the O sera prepared by means of the dried O antigens should be used by all workers for the examination of vibrio strains isolated and in parallel with tests with the usual sera containing H and O agglutinins. The points to be determined in the tests were:

(a) Whether a reliable diagnosis of Vibrios cholerae could be made by the use of O sera prepared by means of the dried O antigen of O group I.

(b) Whether the use of such sera is more reliable than the use of sera containing both H and O agglutinins.

(c) Whether vibrios of serological type other than O group I and inagglutinable by the sera could be assigned a cholerigenic rôle.

The third point was obviously of basic importance as it would be difficult to investigate many points in the epidemiology of cholera unless the cholerigenic vibrio, or vibrios, could be distinguished from other types. For its solution a special investigation was undertaken at the Central Research Institute, Kasauli on the characters of vibrio strains isolated by field enquiries in different parts of India from cases of clinical cholera, healthy persons and water, strains inagglutinable with O group I serum being selected for the purpose.

The most interesting series of strains studied was a collection of 828 isolated from cases of clinical cholera in Calcutta during a period of twelve months which included an epidemic season. Of these 716 (86.4 percent) were agglutinated to diagnostic titre with O serum prepared by means of the dried O antigen of the Inaba type. The remaining 112 strains (13.6 percent) were submitted to serological examination by means of 33 special O sera prepared against vibrios not agglutinated with O group I serum which had been isolated from a variety of sources.

The strains used in preparing the test sera were:

(a) Type strains of O groups II to VI (Gardner and Venkataraman, five.

(b) Selected strains isolated from cases of clinical cholera in Calcutta, thirteen.

(c) Selected strains from cases of clinical cholera in other areas, eight.

(d) Selected strains from healthy persons in Bengal, four.

(e) Strains isolated from water in Bengal, two.

(f) A strain isolated in Kohat, one.

All strains were in addition tested with a serum prepared against a rough variant of an Inaba strain.

By the use of these sera seventy-nine strains (seventy percent) out of the 112 not belonging to O group I, were classified in twenty different O groups none being agglutinated by other sera. Thirty-three strains (four percent of the total) remained unclassified (Taylor, Pandit and Read, 1937).

The total collection of strains can be classified as follows:

Total number	828	
O group I	716	(86.4 percent)
Other determined O groups	79	(9.5 percent)
Unclassified	33	(4.1 percent)

The relationships of the strains classified in O groups other than O group I are shown in the accompanying table.

It is shown that the vibrios isolated from cases of clinical cholera, other than those belonging to O group I, were of numerous different O types. Eighteen of the special O groups were represented by only one to six isolations over a period of a

Relationships of Strains in O Groups

Serial No. of O group	Number of total series	Percent of total series	Distribution of serological type in India	Strains isolated from water
1	20	2.41	Cases and healthy persons	—
2	12	1.45	Cases, healthy persons and water, including waters in Northern India	16
3	6	0.73	Cases, healthy persons and water chiefly in Bengal	2
4	6	0.73	Cases, healthy persons, water, including waters in Northern India. Also in Nanking	10
5	6	0.73	Cases, healthy persons and water including waters in Northern India	8
6	4	0.48	Cases and healthy persons in Bengal. Waters in Rajputana, Madras, and Northern India	8
7	3	0.36	Bengal cases	—
8	3	0.36	Bengal cases	—
9	3	0.36	Bengal cases and Rajputana waters	2
10	3	0.36	Cases, healthy persons and waters	4
11	2	0.24	Cases and healthy persons in Bengal. Waters in Northern India	3
12	2	0.24	Cases in Bengal and Punjab. Water in Northern India	1
13	2	0.24	Cases, healthy persons and water in Bengal. Waters in Northern India	6
14	1	0.12	Bengal and other cases. Northern India waters	2
15	1	0.12	Bengal and other cases. Rajputana water	2
16	1	0.12	Single isolation only	—
17	1	0.12	Two cases only	—
18	1	0.12	Bengal and other cases. One healthy person	—
19	1	0.12	Cases, healthy persons and water	2
20	1	0.12	Cases and water in Bengal and elsewhere in India. Also isolated in Nanking	2

year. The larger group of twenty strains were distributed over a period of three months in which 572 strains of O group I were isolated. The group of twelve strains represents scattered isolations over a year and more strains of the type were isolated from water than from stools. Vibrios of any one of the special O groups were not isolated from any connected series of cases. An investigation on the incidence of vibrios in the stools of noncholera cases admitted to the Campbell Hospital, Calcutta, showed that twenty-five percent of them contained vibrios inagglutinable with O group I serum. At the Carmichael Hospital where a different class of patient is admitted the proportion positive was 8.5 percent. It would thus appear that the incidence of vibrios of type other than O group I in the stools of cases of clinical cholera is no greater than in the general population of the area.

During outbreaks of cholera in the Madras Presidency ninety-five percent of 226 vibrio strains isolated were found to agglutinate with O group I serum to diagnostic titre. The characters of the remaining five percent (eleven strains) were not separately investigated. In the course of the work in Madras strains of the Ogawa type were identified for the first time in India.

The investigation of the serological characters of the Calcutta strains inagglutinable with O group I serum formed part of a more extensive inquiry into the distribution of such strains in India. A total of 558 vibrio strains isolated from cases of clinical cholera, healthy persons, and water were examined for their serological type and biochemical reactions. Of these forty-four percent were classified in thirty-three O groups and the remainder, which were probably of a very large number of serological types, were unclassified. Subsequent work at the King Institute, Madras, resulted in the recognition of a number of additional groups not covered by the sera used in Kasauli. Of the strains isolated from cases of clinical cholera in different parts of India seventy-two percent were classified in twenty-seven different O groups and strains from all three sources were classified in eleven of the O groups. The distribution of the different O groups was widespread, many of the types being isolated in areas widely apart in India. Vibrios of the same O types were obtained from areas in Northern India and from cases of clinical cholera in Bengal, and such strains were isolated from water under conditions in which cholera contamination could be excluded. In a series of vibrio strains isolated from persons in Java who were not suffering from choleraic disease, and at a time Java had been free from cholera for eight years, strains were found of the same O type as some isolated from cases of clinical cholera in Calcutta. A detailed account of the findings has been given by Taylor, Pandit and Read (1937).

To obtain additional information on the distribution and characters of vibrios found in India and their probable significance an examination of open water sources, such as wells, rivers, tanks (ponds) etc., was undertaken in Northern India, the areas selected being ones in which cholera was nonendemic. In certain of the areas selected, contamination from cholera sources during the previous year could be excluded. From every one of seventy-four water sources in the Punjab and United Provinces examined during the hot weather and from sixteen out of seventeen during the cold weather vibrios were isolated. In the majority of cases more than one serological or biochemical type was isolated. No strain of O group I was found. Tests with the special O sera showed fifteen percent of the strains to belong to the same O groups as vibrios isolated from cases of clinical cholera (Taylor and Ahuja, 1938). Similar examinations carried out on open water sources in Calcutta yielded eighty-six percent of positive isolations and all samples from the river Hoogly were positive (Pasricha, Chatterjee and Das, 1938). In Assam ninety percent of samples yielded vibrios and no difference was found in incidence during the hot weather and cold weather periods (Pandit and Maitra, 1938). In the Madras Presidency practically all open sources in the plains which were examined showed the presence of vibrios.

A further indication of the widespread distribution of organisms of the vibrio group in India is shown by the isolation of strains from the feces of different species of domestic and laboratory animals in Calcutta (Pasricha *et al., loc. cit.*).

From these observations the following conclusions may be drawn:

1. Vibrios of many different serological types are widely distributed in India and they are almost universally present in open water sources.

2. From the very great majority of cases of cholera the vibrio strains isolated are found to belong to O group I (Gardner and Venkataraman). Strains of that type are not found except in immediate relationship to the cholera case.

3. Vibrios isolated from cases of clinical cholera which do not belong to O group I are of numerous different O serological types and many of the types identified have also been isolated from other sources including areas where cholera contamination can be excluded. The incidence of such strains in the stools of cholera cases is not greater than that in the general population of the area.

4. Vibrios of any one serological type other than O group I were not isolated from any series of cases of clinical cholera chronologically or geographically related.

No evidence was obtained that more than one serological type of vibrio was the cause of cholera. (The Inaba and Ogawa types are taken as belonging to the same serological group.) Vibrios of many different O antigenic types isolated from a variety of sources were found to agglutinate with sera prepared against unheated suspensions of Vibrio cholerae. These possess the same H antigen as the *cholerigenic* vibrio. Of the 112 strains of types other than O group I included in the Calcutta case series fifty (forty percent) were agglutinated by sera containing both H and O agglutinins. In the larger series of 558 strains from cases of clinical cholera, healthy persons and water thirty percent were of that type. The proportion in the case of strains isolated from water in Northern India under conditions in which contamination from cholera sources was unlikely or remote was thirty-six percent..

The results of these investigations provide an answer to the question asked by the Office Internationale d'Hygiene Publique as to the existence of one or more type of vibrio to which a cholerigenic role can be assigned. They also show that for the diagnosis of Vibrio cholerae the separate determination of O agglutination is essential. The dried O antigens prepared in England and issued from the Standards Laboratory, Oxford, have been found to serve the purpose for which they were designed and provide stable reagents by means of which agglutinating sera may be raised in any part of the world with which a reliable diagnosis of vibrio cholerae may be made.

The use of O sera prepared against either the Inaba or Ogawa type of antigen and absorbed with the heterologous strain enables a serum to be obtained which will be active only against the type specific O fraction. By the use of such sera both Inaba and Ogawa infections have been recognized in India. In the earlier phase of the work only Inaba infections were found in Bengal and Northern India. A few Ogawa strains were isolated in Assam. Later an extensive Ogawa outbreak was observed in the Madras Presidency (Venkataraman and Pandit, 1938) and it was shown that in different areas of the Presidency one or other type of infection prevailed. The areas in which the Inaba and the Ogawa type were responsible for epidemics showed continuous changes in the Madras Presidency and at one period Ogawa became the prevailing type in Bengal and was also isolated from an outbreak in the Punjab. There was no consistent geographical distribution of infections due to either type and no difference was found in the epidemiology of outbreaks or the clinical character of the cases due to either type. For practical public health purposes the use of a nondifferential O serum will be adequate for the diagnosis of Vibrio cholerae.

The El Tor Vibrio and Vibrio Hemolysin

The name "El Tor" is used to designate vibrios which are of the same serological type as Vibrio cholerae but which, contrary to Vibrio cholerae, produce a soluble hemolysin in culture. Such strains have been isolated from a number of sources and are regularly found in the stools of pilgrims returning to Egypt from the Hedjaz. It has generally been accepted that strains of the El Tor type are not cholerigenic and their isolation has not been considered a reason for the application of special quarantine measures against cholera. Cholera has not occurred on the release of pilgrims from whom the hemolytic vibrio has been isolated.

The question of the epidemiological status of the El Tor vibrio was reopened by certain occurrences in the Celebes. A scattered outbreak of choleraic disease occurred and from the stools of cases the only vibrios isolated were hemolytic strains of O group I and nonhemolytic strains of the same serological type were not obtained from any source in relation to the cases. The workers engaged in the investigation assigned a cholerigenic rôle to these hemolytic strains. There was much discussion on the subject particularly as the Celebes outbreak showed features which differed considerably from those shown by cholera elsewhere. A comparatively small number of cases occurred during a period of several months, the cases being scattered over twenty-four different places without any definite epidemic wave. In commenting on this point one of the Dutch observers expressed the opinion that the difference in epidemiology might justify the conclusion that the outbreak was not true cholera. He suggested that the strains might be designated Vibrio celebes, but they do not appear to show characters which would distinguish them from the El Tor vibrio.

The question of the El Tor type and its significance was investigated in India and the examination of a large number of strains isolated from cases of clinical cholera and other sources in the period from 1935 to 1938 failed to show their presence. Later, however, in the course of field investigations in the Khulna District of Bengal where cholera is endemic, and at times epidemic, strains of the El Tor type were frequently isolated from water. They were found both in the presence and in the absence of cholera but more frequently when cholera was absent. The only occasion on which an El Tor strain was isolated from a human source was dur-

ing a small outbreak of cholera in the Khulna area. The vibrios isolated from the cases were typical nonhemolytic strains of Vibrio cholerae with the exception of one hemolytic strain from the stools of a child who rapidly recovered from an attack of choleraic disease. A cholerigenic role could not definitely be attributed to the organism as vibrios of the same type were numerous in a source of water supply to which the child had access. Vibrios of the El Tor type were also found in water in the neighboring province of Bihar in the absence of cholera.

Further information on the existence and significance of the El Tor type was obtained by extending the investigations to the province of Sind which is far removed from Bengal and the endemic area and presents widely contrasting climatic and physical conditions. The province is hot and dry for the greater part of the year and although cholera sometimes occurs when introduced from outside it does not persist and the areas affected are usually limited. In an area in which cholera had not occurred for ten years vibrios of the El Tor type were isolated from eighteen out of 175 water sources examined and no nonhemolytic strains of O group I were found, (Read and Pandit, 1941). The El Tor vibrio was also found in waters in the Madras Presidency in the absence of cholera by Venkataraman, Krishnaswami and Ramakrishna (1941).

The observations made in India do not show any relationship between the incidence and distribution of the El Tor type of vibrio and the occurrence of cholera. The El Tor vibrio was found to be more persistent in water than Vibrio cholerae which was only recoverable for a very short period after first isolation. The strains isolated in India were serologically of both the Inaba and Ogawa types, the latter being the commoner.

The method usually employed in India for determining the production of hemolysin by vibrios is that of Greig (1914). Greig added a suspension of washed goats' red blood cells to a seventy-two hour culture in alkaline broth, incubating for two hours at 37°C. and reading the result after keeping overnight in the ice chest. In recent work in India more regular results were obtained by using a twenty-four hour culture in isotonic broth. The examination of a large number of strains isolated from different sources showed that many strains under certain conditions of test might produce some hemolysin although negative to the usual Greig test. The essential difference between the Greig-negative and the Greig-positive strains was that the latter produced lysis under all conditions of test, including incubation at low temperature and absence of oxygen, lysis usually occurring in twenty-four hours, while the Greig-negative strains only caused hemolysis slowly in the presence of oxygen and warmth. The hemolysin was found to be destroyed by heating at 56°C. for ten minutes. Filtrates rapidly became inactive when kept at 37°C. but when kept in cold storage with or without the addition of 0.5 percent phenol or 0.2 percent formalin they remained active.

The hemolysin produced by a number of different strains was found to be neutralized quantitatively by serum prepared against a heterologous hemolytic strain but not by serum prepared against a nonhemolytic (Vibrio cholerae) strain (Goyle, 1939).

Differential Isolation of the Vibrios

For the purpose of special investigations on cholera in India it was found essential to develop differential cultural methods which would enable Vibrio cholerae and other vibrios present in water and other sources in very small numbers to be isolated when organisms of other types were in overwhelming preponderance. Most methods in use for differential isolation of vibrios depend for their effectiveness on the fact that the vibrios are capable of multiplication in a medium of high alkalinity and good growth can be obtained up to pH. 9.4 at which reaction many other types are suppressed. For direct plating of stools and water Aronson's agar medium was largely used and almost pure cultures of vibrios were obtainable on it from many sources containing a mixed bacterial flora if vibrios were present in sufficient numbers in the inoculum used.

The best results were obtained when the sodium carbonate was reduced to five-sixths of the quantity given in the original formula. If vibrios are likely to be present in only very small numbers in material submitted to culture a preliminary differential enrichment will be required for their isolation and special studies on this subject were carried out by Read (1939). The difficulty found in the use of alkaline liquid media was that, especially when carbohydrates were included in their composition, a rapid reduction in pH occurred and the vibrios were overgrown by coliform and other organisms. A medium was eventually devised which was based on the bismuth sulphite enrichment medium of Wilson and Blair (1931) after testing the effect of each constituent on the growth if Vibrio cholerae. Alterations and substitutions were made in the formula and the composition finally selected by Read was:

Peptone, two percent	8.8 cc.
Sea-salt mixture	1.2 g.
Mannose, ten percent	1.0 cc.
Liquor bismuthi	0.12 cc.
Sodium sulphite, two percent	1.2 cc.
Alcohol absolute	0.2 cc.
Mercuric chloride, 1/10,000	0.8 cc.
Aq. dest	10.0 cc.

The inclusion of mannose was based on the observation that in a medium containing this sugar a vibrio strain, such as Vibrio cholerae, which fermented mannose, rapidly outgrew Vibrios which did not ferment it, and could be recovered in almost pure culture when the strain not fermenting mannose had been present in the original inoculum in overwhelming preponderance.

The use of the modified bismuth sulphite medium containing mannose resulted in increased success in isolations from water and Vibrio cholerae was frequently isolated from tanks and other open sources while this had rarely been accomplished by other methods. Concentration of the organisms in water was carried out by passing several litres through a filter paper impregnated with keiselguhr and subsequently placing the folded paper in the enrichment medium. The method unfortunately is not fully

differential between Vibrio choleræ and all other vibrios as many strains other than Vibrio cholerae, including those often found in water, also ferment mannose and if such are present they may outgrow the cholera vibrio. Efforts to find a substance specifically fermentable by Vibrio cholerae and not by other vibrios were unsuccessful.

For the preservation of vibrios in specimens collected in the field for dispatch to the laboratory a two percent solution of sea-salt was found to be satisfactory and in the case of water the addition of sea-salt to that concentration.

Venkataraman and Ramakrishna (1941) found a potassium chloride-boric acid buffer at pH 9.2 effective and stools preserved in this solution have yielded cultures of Vibrio cholerae up to eighty-one days. A glycocoll-sodium hydrate buffer at the same pH was also found effective.

Epidemiological Observations

The outstanding problem in cholera on which further information is required is the question of the way in which infection is maintained in the endemic areas from which epidemic spread originates. The work which had been carried out on the serology of the vibrios and on methods of differential isolation provided a basis for fresh investigations on the subject and a field inquiry was established in an endemic area in the Bengal Presidency with the object of ascertaining the conditions under which Vibrio cholerae exists in the area. This involved examinations on a large scale of the stools of the general population, cholera cases, contacts, "carriers" and water. A detailed account of the work has been given by Read and Pandit (1941).

In the course of two years work Vibrio cholerae was not isolated from any source except the cholera case, close contacts and water in the immediate vicinity of a case. Investigations carried out on the general population on a large scale by means of the special differential cultural methods which had been found to be highly effective under experimental conditions failed to yield a single isolation of Vibrio cholerae. The period of persistence of the vibrio in the stools of cases of cholera was found to be short and from the majority of convalescents it could not be isolated after the fifth day from the onset of the attack. In a few cases it was found for a somewhat longer period the maximum being thirteen days in one case. Somewhat longer persistence has been reported elsewhere in rare instances.

The existence of the "contact carrier" was fully established during the investigations and these were frequently found amongst the members of the household of a case. In one small outbreak thirty-one direct contacts were examined and positive isolations were obtained from six (nineteen percent). In the same village the examination of twenty-nine persons who were not close contacts gave negative results. In another village series thirteen percent of direct family contacts were positive within five days of onset of the connected case but only five percent later than five days. For a third series the respective figures were twenty-nine percent and eight percent. The detection of a "carrier" before the onset of a case in the vicinity was not accomplished and evidence was not obtained incriminating a "carrier" as the source of infection..

The part played by the carrier in the transmission of cholera had been the subject of a special report by Couvy (1933) who examined the evidence available at the time for the Office Internationale d'Hygiene Publique. Couvy found that while transmission by the recent convalescent and the incubating case was well established no positive evidence was obtainable as to transmission by the healthy carrier. It had not been shown that a true carrier state existed in the case of cholera in the sense that it does in typhoid fever, that is, in the form of individuals excreting the vibrio continuously or at intervals over prolonged periods. The necessity for further investigations on the point on a sound serological basis for the diagnosis of Vibrio cholerae was recognized and in a footnote to Couvy's report it was suggested that this could best be carried out in India.

The observations made in India have failed to show the existence of a true carrier state and although persons in immediate contact with cholera may excrete the vibrio in their stools they have been found to clear themselves of the organism as rapidly as the convalescent case. The conditions under which Vibrio cholerae has been found in the stools of healthy persons in Bengal would suggest that the state of such persons could best be described as one of "sub-clinical infection" rather than the "carrier" state and this term would more correctly indicate their epidemiological significance. The organism in such cases may be derived from the connected case or from the same source as that from which the case was infected and "subclinical infection" appears to be not uncommon. This was also observed in the Madras Presidency.

It would be expected that healthy persons excreting Vibrio cholerae would be capable of transmiting infection during the short period they do so but no definite evidence on this point was obtained.

In the course of the examination of several thousand water samples in the endemic area of Bengal, Vibrio cholerae was not isolated out of contact with cholera except on one occasion. Evidence of infection of water preceding an outbreak of cholera was not obtained but this might present considerable difficulty. The maximum period after the onset of a connected case of cholera in which Vibrio cholerae was isolated from water was sixteen days but it was not of course possible to establish its relationship to the case. Although outbreaks do occur which are due to recent infection of water supplies the evidence obtained in these investigations does not indicate that the persistence of Vibrio cholerae in water was a factor in endemicity in the area.

One of the arbitrary criteria which has been taken for the recognition of an area as "endemic" is that the total number of months with absence of cholera deaths should not exceed thirty in thirty-two years. Such continuity of infection exists in certain areas of Lower Bengal and the observations made in one of the Districts would appear to put emphasis on the importance of the human factor in maintenance of infection. Although certain ground

has been cleared it cannot be claimed that the factors concerned in endemicity of cholera have been elucidated and we are as yet unable to say why cholera should be truly endemic only in certain limited areas in India and South East Asia.

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CHRONIC OR LATENT MALARIA AND ITS SEQUELAE

Hay Fever and Other Allergic Conditions

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(*Continued from page* 410)

Case Histories

Case I.—Mr. L.L., pharmacist, aged thirty-eight. The patient had suffered for at least twenty years from severe hay-fever, and had always been almost incapacitated from the beginning of the outbreak in August. When the patient came to see me he was in very bad condition, sneezing violently, with a watery discharge, nasal blockage and lacrimation.

Examination.—He showed the typical symptoms of malaria, and the mucous membranes were lifeless in the pars anterior, and highly inflamed in its posterior part. Otherwise he was a healthy man. In such an acute attack one cannot expect a complete recovery unless the mucous membranes are restored.

Treatment.—The nose of the patient was treated by ionization with quinine and inhalation with a stimulation-salt solution. Simultaneously he was given twelve zulzyme capsules daily with the result that after ten days he was in relatively good shape. The following August he again came for a double treatment. During the last three years the patient has been practically free from hay-fever and has not come for more treatments.

Summary.—A patient with hay-fever came just two weeks after the outbreak of his seasonal hay-fever in very bad shape. Intensive enzymic treatment relieved him quickly and kept him free from attacks for practically three years.

Case II.—Dr. H.H., New York, aged sixty-one. During 1935 and 1936 the patient lived in South America. In December, 1937, he began to complain of neuralgic pains in his left arm which gradually became so intense that he took whatever antineuralgic medicaments the physicians suggested, even sulfa drugs. When I saw him in the spring of 1938 I found a typical left ulnaris neuralgia, which was so severe that he could not lean his arm on a chair and had very restless nights.

Examination.—An otherwise healthy man had typical malaria (exanthema, liver and spleen enlargement, Henry reaction positive). He was treated with zulzyme capsules only (ten a day) as he refused the electrical and all other treatments because they formerly had failed completely. In due course the symptoms of malaria disappeared. After three weeks the patient began to feel better, and after four weeks the pains had subsided completely. A slight relapse a few months later was due to an attack of influenza and was quickly relieved.

Summary.—A severe neuralgia, one of the most common aftereffects of malaria, vainly treated in the usual way with antineuralgics, was cured by curing the malaria. Months later when the patient contracted influenza, there was an apparent relapse of neuralgia; that is to say, only apparent, because influenza has the ability to dig out, so to say, old weak spots. However, they are buried again as soon as the influenza is removed. This patient is, as a matter of fact, completely cured and has had no further relapses to date.

Case III—Mr. Z.B., Yugoslavian, aged forty-two. The patient had been suffering from hay-fever for fifteen years. I saw him at the very beginning of this year's outbreak. The eyes were beginning to show inflammation. In his youth he had had several acute attacks of malaria in his homeland, but never in this country.

Examination.—The patient showed the typical symptoms, such as enlarged liver and spleen, positive Henry reaction, etc.

Treatment.—I immediately gave him massive doses of the zulzyme capsules, ten to twelve daily. No hay-fever attack developed, his liver and spleen enlargement receded to normal size in eight days, and he subsequently remained completely free from hay-fever.

Comment.—A just beginning fresh attack of hay-fever with the causative latent malaria cured in the record time of eight days. Patient continued to take the capsules about three weeks longer.

CASE IV.—Dr. H.H., New York, aged fifty-seven. After a trip through Peru and neighboring countries, the patient complained of severe neuralgia in his left arm, lumbago and other rheumatic pains, with consequent severe insomnia. He connected all this with previous colds. Various treatments during the past few months had proved unsuccessful.

Examination.—The patient showed an enlarged liver (13 cm.) and spleen, (14 cm.), typical malaria exanthema. Of the other findings I shall mention only: the blood pressure increased to 165/100, bilateral sciatica, and a slight fixation of the left shoulder joint. The Henry test showed a strong positive malaria reaction.

Treatment.—The patient was treated with zulzyme, eight capsules daily. Ten days later liver and spleen were reduced to normal size, and all neuralgic pains had subsided. Four months later the Henry test was negative. The neuralgia had completely disappeared, some pain recurring in bad weather. Patient has been healthier ever since.

Summary.—A malaria infection acquired in South America showed typical symptoms. Serious neuralgias had developed, partly incapacitating the patient. The enzymic treatment cured the malaria in a relatively short time; four months later the malaria test was negative, and since then the patient has had no complaints.

CASE V.—Mrs. J.F., Northvale, N.J., aged forty-four. For seventeen years the patient had suffered from malarial attacks every few weeks. She was treated with the usual dose of quinine without lasting effect. She eventually developed pernicious anemia and was treated successfully with three blood transfusions. After three weeks she was able to go home from the hospital. The acute attacks of malaria did not stop so the patient came to see me.

Examination.—Examination of the patient showed a weakness of the heart, myocardia, bluish lips, systolic murmur, hypertension (220/120), and inveterate ulcus cruris. Malaria infection was manifested by the pronounced exanthema, liver and spleen enlargement and positive Henry reaction.

Treatment.—As usual twelve enzymic capsules were given daily, as well as local treatment for the ulcer. What is particularly interesting is the fact that after the beginning of the treatment the patient had no more attacks of malaria. The liver and spleen became normal in size. The heart and blood pressure became almost normal (the latter 140/95), and the patient felt perfectly well. Cortunon, the heart hormone, was given for the heart condition.

Summary.—This very satisfying result is, of course, due in large part to the heart hormone, but my long experience has taught me that such results can hardly be reached unless the accompanying, or better, the underlying infection is removed. The best students of malaria believe that latent malaria can mimic any disease.

CASE VI.—Mrs. I.F., New York, aged thirty-one. The patient had had attacks of hay-fever twice a year with continuous sneezing, itching of the eyes, etc., since 1926. She seemed to be affected by all green vegetables.

Examination.—Physical examination showed an enlarged liver and spleen (liver 10 cm., spleen 19 cm.) and typical malaria exanthema. The mucous membrane showed signs of chronic irritation. The Henry reaction was positive.

Treatment.—Ten enzymic capsules were given daily, and quinine ionization to both nostrils. After six days of treatment the patient felt much better and the sneezing had decreased. After eight days, she developed a fresh influenza with increasing sneezing. After treatment with quinine, for two more days, the cold improved, with the symptoms of hay-fever again vanishing. After twelve daily treatments the patient had to come to the office for treatment only twice a week. The liver and spleen became normal in size after two weeks of treatment and the Henry reaction became negative. The patient looked well, and felt definitely better than she ordinarily did at that time of year. Until the end of August there was no sign of hay-fever. The patient first visited me in June, and was free from attacks for the ensuing year.

Summary.—An uncomplicated case of hay-fever, treated in the usual way, reacted with a complete cure of the disease.

CASE VII.—Mrs. D.K.H., New Jersey. This patient had been subject to allergic reactions since her childhood, and had received x ray treatments for eczema. This skin infection had been aggravated after a trip through the Panama Canal two years before. After each menstrual period there ensued a marked deterioration in the skin condition. There was an improvement in the winter, but influenza disturbed the picture. The patient had typical chronic malaria: liver 14 cm., spleen 23 cm. Multiple neuralgias (first to third cervicalis, sciatica) were present. The Henry test was positive and the blood sedimentation was two and one-half hours.

Treatment.—Zulzyme capsules were given in the usual dosage as well as an oxygen salve applied locally. After two months the patient felt definitely improved, and the skin on neck and arms cleared except for a few eruptions on the back of the head. Deep mental depression which had existed disappeared and the patient was able to do her work again. The malaria test became negative.

Summary.—The patient was cured of eczema by a course of zulzyme. The latent malaria was the cause of this disease.

CASE VIII.—Mr. G.C.W., New York, aged sixty-three. Forty years ago this patient had malaria in the Pacific. Liver 11.5 cm., spleen 23 cm. The liver was sensitive to percussion; blood pressure 145/112; slight sciatica, phlebitis of jugular and leg veins. There was a slight enlargement of the prostate and spasms when urinating. Gerontoxon was present.

Treatment.—Enzymic capsules and cortunon were

given. Two weeks after the beginning of the treatment the liver and spleen were normal in size. The patient reported that some months after treatment with zulzyme his allergy to coffee disappeared, as well as his hay-fever. A year later, after staying in the South, the allergy developed again and liver (10 cm.) and spleen were enlarged, but only slightly as the patient had taken zulzyme capsules at frequent intervals. The Henry test was slightly positive.

Summary.—A patient who had acquired typical malaria in his youth showed an allergy to coffee as the only symptom. He told me that his allergy had disappeared after the first treatment, but suddenly returned and the clinical symptoms as well as the Henry test were positive. In spite of the very light affection in this case it is typical, as proved by a very shrewd and unbiased self-observation, that allergy, e.g., hay-fever, can be provoked by latent malaria.

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PAINLESS TREATMENT OF ANKYLOSED JOINTS

*A Report of Nineteen Years' Study**

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I have endeavored for many years to work out definite, but painless methods of treating disease. This has been achieved in a few clinical conditions, and the results of some of this work has appeared in medical journals (1,2,3,4). In this paper I shall report the results of another line of work by means of which I hope to benefit the injured of the U.S. armed forces (as well as civilians) who suffer from ankylosed joints.

The treatment of joint adhesions (ankylosis) as practiced today is accompanied by pain. Some of the methods employed are fraught with danger and may contribute to permanent disability. I shall review briefly the standard methods employed starting out with DaCosta's discussion of this subject. In defining ankylosis DaCosta says (5): "When a joint inflammation eventuates in the formation of new tissue in and about the joint, contraction of this tissue limits or destroys joint mobility, producing the condition known as 'ankylosis'. Ankylosis may be complete (bony) or incomplete (fibrous). It may arise from contractures in the joint (true or intra-articular ankylosis) or from contractures in the structures external to the joint (false, or extra-articular ankylosis)."

In this report I shall deal exclusively with the treatment of fibrous ankylosis. Bony ankylosis is not amenable to physical medicine. It is the task of the surgeon alone.

Etiology.—Trauma: Traumatic synovitis or traumatic arthritis, fracture of a joint; disuse (due to splinting, casts, etc.); rheumatoid or gouty arthritis; suppurative synovitis, suppurative arthritis, etc.

Pathology.—In fibrous ankylosis, bands of fibrous connective tissue unite the structures forming a joint, thereby limiting motion.

Treatment.—Brisement forcé and redressment are terms applied to the use of such manipulative force as the surgeon can judiciously employ in freeing a joint from fibrous adhesions. The main dangers of this method are breaking the shaft of the bone, separation of epiphysis, etc. When there are dense fibrous adhesions the ankylosis invariably recurs after manipulative force and often becomes worse than before.

Brisement forcé is employed practically by all surgeons, who are, however, aware of its hazards and warn us against them. One surgeon (6), for instance, states: "In the treatment of ankylosed joints by manipulation under anesthesia it is important to bear in mind that the elbow tolerates very badly

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forcible manipulations under anesthesia. The periosteum tears easily and soft tissue ankylosis is rapidly changed into a bony ankylosis by forcible manipulations even when gently applied."

Occupational therapy is, of course, safe and painless. It is, however, the slowest of all methods available to produce results. Furthermore, in severe cases occupational therapy alone may prove to be useless. Baking, massage and manipulation are accompanied by pain, and often give poor results.

Author's Method

The method, or system of methods[1], deseribed in this paper is of definite therapeutic value, and at the same time painless and safe. I shall call it the combined ion transfer and interrupted sine wave method. It consists of two separate procedures, ionization followed by interrupted sinusoidalization.

The prerequisites are apparatus, drugs, towels, metal, bandages, glass or porcelain vessels and hot water. I use one apparatus delivering both currents, galvanic and sinusoidal, e.g., the Morse wave, etc. Separate apparatus may be used.

Drugs.—I use the following three drugs in ionization for the treatment of joint ankylosis: sodium chloride, sodium salicylate, and iodine.

Sodium chloride, that is, chemically pure common salt is useful in ionization for the treatment of ankylosis because it liberates chlorine ions, which, as is known, possess a "lytic" (softening, dissolving) effect on fibrous connective tissue; sodium hydroxide is also formed. I noticed that ionization with this drug was best suited in ankylosis due to trauma or disuse (without the subsequent formation of pus), e.g., traumatic arthritis, traumatic synovitis, fractures, casts, splints, and so on.

Sodium salicylate: The salicylate ion exerts the same effect on fibrous connective tissue as does the chlorine ion; however, I have noticed that this drug gives best results in ankylosis where the etiology is rheumatoid arthritis (7).

Iodine is appropriate in ankylosis where the condition responsible for it was pus formation, such as suppurative arthritis, suppurative synovitis, etc.

The drugs are employed in the form of solutions made with hot water. For ionization with sodium chloride and sodium salicylate I use a one percent solution. If iodine is used, five drops of the seven percent tincture of iodine to the ounce of water is sufficient. A stronger or weaker percentage may be used as the condition requires. I have always used warm water from the faucet with satisfactory results; distilled water may be preferred in preparing a solution of sodium salicylate. The solution should be as warm as the patient can tolerate. When I speak of the "proper solution", I mean one containing the drug which is proper for the treatment of a given ankylosis with respect to its etiology as discussed above.

Other prerequisites.—Plain soft towels (not Turkish) are employed, but if these are not available cotton gauze or any other suitable material may be used. The metal used is block tin, the same as that used in conventional diathermy. The Ace type of bandage is preferred. Glass or porcelain vessels should be wide and deep enough to accommodate the hand or foot freely and comfortably. They are used in the treatment of ankylosis of the phalanges.

Electrodes.—Three kinds of electrodes are used: readymade surface pad electrodes which come with the apparatus; homemade electrodes which are prepared by the operator from towels, gauze, cotton, etc.; and jars or basins for the treatment of the phalanges.

Two of the three electrodes are employed in a treatment. One is known as the active electrode. In the treatment of ankylosis this electrode is always "homemade", and is always soaked in the solution; it is always applied to the joint treated, and the negative pole is attached to it. The other is known as the inactive, dispersive or indifferent electrode. The positive pole is attached to it.

In ionization the employment of the proper pole is important. If the improper pole is used the treatment is useless. It is therefore obvious that one must make sure that he employes the proper pole. There are several tests for that purpose; two are given here.

Tests for polarity.— 1. The H_2O method: Fill a glass with water. (Some add a small amount of sodium chloride to the water). Put into it the metal ends of the two cords, the other ends of the cords being attached to the terminals of the poles of a galvanic apparatus. The metal ends in the glass should be kept about one and one-half inches apart. The current is now opened and raised to 10 ma. Bubbles will soon appear at the metal ends in the glass. Bubbles will collect around the two metal ends, and the one collecting the greater amount (twice as much) is the negative pole.

2. Normal muscle test method: This is based on the well known physiology formula that C.C.C.>A.C.C.; that is, the cathode (—) closure contraction is greater than the anode (+) closure contraction. The pole which gives the stronger contraction of the muscle is the negative one.

The poles can also be quickly identified by various devices on the market, such as the voltmeter.

Response of Joints to Treatment

All joints affected with fibrous ankylosis respond most satisfactorily to the methods which have been discussed in this paper, except, perhaps, the hip joint, which is deeply situated and surrounded by masses of muscle and tissue that divert the current before it reaches the affected joint.

[1]It is in place to mention here that some of my methods were employed by surgeons of our armed forces overseas and in the United States as shown by the following excerpts of some of the many letters I have received:

"Would it be possible for you to send me copies or reprints of your articles and any additional description of your methods and apparatus that you would find applicable to early cases in the armed forces."

"Thank you for making the results of your treatment more widely available, and in thus indirectly helping in the treatment of our soldiers you will be doing 'your part' in a very fine way during this war."—From somewhere in the South Pacific—

"The officers assigned to the Army Rheumatism Center at ——— would greatly appreciate receiving reprints of your following publications." From the U. S. Army——— and Navy——— Hospital, etc.

Detailed Description of Methods and Technique

Two treatments are given at each seance; 1, ionization (otherwise known as ion transfer, iontophoresis, etc.); this is followed by, 2, treatment with interrupted sine wave current (sinusoidalization). We start first with the ionization.

1. Ionization Technique

Application of electrodes.—As we know now, in this treatment two electrodes are employed—active and inactive.

Active electrode: Fold a towel in eight layer thickness and of a length and width sufficient to cover well the entire joint. Wring out the folded towel from the (hot) solution, and wrap it smoothly around the ankylosed joint. The ends of the towel should overlap one another. If cotton is employed it should be of uniform thickness, about one-eighth to one-quarter inch throughout after the excess of the solution is removed. Flatten it while wet on a smooth surface. (In ionization sufficient padding is used). Apply on the soaked material, over the smoothest part of its surface, a piece of metal (say two inches by five inches) and hold both in place by a bandage. The metal should not touch the bare skin, otherwise a burn will result. The cord from the negative pole is attached securely to the metal. In the treatment of phalanges the active electrode consists of a vessel, the technique of employment of which is given in detail in the discussion of the treatment of ankylosed phalanges (vide infra).

Inactive or dispersive electrode: This electrode is larger than the active one. Its surface area, in square inches, may be about one-third larger than that of the active electrode, and it may be prepared the same way as the active one. However, the material is wrung out from plain warm water from the faucet, without the admixture of any drug. It is folded like a large pad and placed on a convenient part of the body (discussed below). On the pad a piece of metal (which is one-third larger in area than the metal of the active electrode) is placed, and both are held in place by a bandage or sandbag. A readymade surface pad electrode well soaked in plain warm water may be used instead. The cord from the positive pole is attached, securely, to the metal of this (dispersive) electrode. It is understood that the electrodes (i.e., the paddings not the metal) are in contact directly with the bare skin.

Where to apply the dispersive electrode: Upper extremity: If a joint of an upper extremity is treated, the dispersive electrode is placed at the region of the cervicodorsal spine, under the buttock, or on any convenient part of the body on the same side of the extremity treated, avoiding the cardiac region. If the two electrodes are placed one near another their nearest edges should be three or four inches apart.

Lower extremity: If a joint of the lower extremity is treated, the inactive electrode is placed below the waistline, usually under the patient's buttocks, and he may lie or sit on it, thus doing away with bandaging. The electrode may also be placed at the lumbar or lumbosacral region and held in place by a bandage or sandbag. If we choose to apply this electrode above the waist line it is placed on the same side of the joint treated. Do not place it on the other side of the body opposite or above the cardiac region so that the current will not cross the heart.

Opening of current.—The electrodes are now in contact with the patient. The next step is to attach the cords from the galvanic apparatus to the metal pieces of the electrodes and open the current. Before doing so, however, it is advisable to test the behavior of the apparatus. For this purpose open the current and bring in contact the metal ends (clips) of the cords, the other ends of which are connected to the pole terminals of the apparatus. Increase the current from 0 to 10 ma. and note whether the meters register properly. Examine the action of both currents, galvanic and sinusoidal. If all is well, reduce the current to zero and attach the clips of the cords to the electrodes which are in contact with the patient. Raise the current gradually from 0 to 5-10, etc., ma., or to the patient's tolerance. (The apparatus could be tested just before applying the electrodes to the patient.) We employ 1 to 2 ma. for each square inch of the surface area of the metal of the active electrode; or the current is raised to the patient's tolerance if skin sensation is normal.

Ionization treatment is begun with twenty minutes and increased gradually by five minutes at each seance until forty-five minutes to one hour is reached and this time is then given at every seance, until the patient is cured.

Treatment By the Interrupted Sine Wave Current

Technique.—As soon as the ionization treatment is completed, leaving the entire arrangement of electrodes in situ *undisturbed,* the galvanic current is immediately changed to an interrupted sinusoidal current, giving twenty to twenty-two interruptions per minute. If the Morse wave apparatus is employed, use cam No. 2 which gives about the same number of interruptions per minute. This is the physiological number of contractions per minute of skeletal muscle. I have found this number of contractions to serve the purpose in the treatment of joint ankylosis.

Strength of sine wave current: The contractions of the sine wave current transmitted to the tissues are powerful. The treatment should therefore be administered carefully. Begin with a mild current, gradually increasing it to the patient's tolerance or to somewhat below that tolerance.

Time of treatment: Beginning with one-half to one minute at the first seance, the time is increased one-half to one minute at each subsequent seance until eight to ten minutes are given. This time is kept up until the ankylosis is cured.

Pain caused by treatment: The interrupted sine wave current gives no pain. However, in my wide experience, occasionally I have encountered cases in which the patients did complain of pain after the first treatment. This, no doubt, was due to insufficient carefulness on the part of the operator. To

avoid pain it is important to start with contractions barely perceptible by the patient and perhaps for one-half minute only, the time and strength of the current to be increased gradually at each subsequent seance. It is in place here to mention that some patients may suffer from myositis in the region of the affected joint, and the sine wave treatment may aggravate this pain. The myositis should be taken care of before the treatment is begun. I have found that a genuine myositis (not myalgia) responds definitely to infrared radiation (8).

As a rule the interrupted sine wave current is contraindicated in pain. However, in some painful chronic joint conditions in the presence of ankylosis the employment of this current proved to be beneficial.

Treatment of the Joints

Knee joint: The knee is treated first by ionization. This is followed by treatment with interrupted sinusoidalization, the operator being guided by the technique above described.

Hip joint: The active electrode is a "homemade" pad. It is placed on the anterior surface of the joint region, its upper border falling one inch below Poupart's ligament. (In this way the interrupted sine wave current will not affect the abdominal viscera.) Its outer border should overlap the anteroexternolateral border of the region of the hip joint. The inactive electrode is applied to the buttock in the region of the joint. Further technique is carried out as previously described.

Ankylosed phalanges: The treatment of this condition is difficult. In fact, Mock (6), discussing the treatment of ankylosed phalanges, says that "No other condition calls for greater effort on the part of the surgeon and the physical therapy expert."

The method most often employed in the treatment of ankylosed phalanges is the application of heat followed by massage and manipulations. The latter procedures consist of some more or less forceful flexing or bending of the stiffened fingers, a procedure which is rather torturous. The operator has therefore to be careful not to hurt the patient, especially at the beginning, otherwise he may fear the treatments and no longer cooperate. With reference to this form of therapy the surgeon quoted above says: "Forceful flexing or bending of such stiffened fingers when first seen will serve only to cause great pain and frighten the patient. He becomes like a colt that is roughly bridled for the first time. If a physician has made his patient afraid to let him touch or even slightly manipulate the hand, the battle has already been lost because the necessary cooperation of the patient will not be restored or obtained . . . It is essential to warn the patient and everyone connected with the case that it may take weeks or months to secure even a partial result . . . Forceful manipulation of such fingers under anesthesia practically always results in a marked traumatic reaction with a definite increase in the disability."

On the other hand, if little force is applied it will take too long to obtain any results. I present in this paper a method which offers better results than can be obtained by any other method available, being at the same time one hundred percent painless. It is as follows: The active electrode consists of a nonconducting vessel filled with the solution. It is large and deep enough to accommodate freely the phalanges or the entire hand or foot. A piece of metal about two inches wide and of sufficient length is well immersed in the solution and is in contact with the inner surface of the wall of the vessel. Its uppermost portion is bent over the rim of the vessel wall and the cord of the negative pole is attached to it. The patient places the phalanges or his entire hand or foot into the vessel. The inactive electrode and the remainder of the technique, including interrupted sine wave treatment following the ionization, is the same as that described above.

Ankylosed toes: If the toes alone are affected, the following technique is employed: The patient lies prone on a table. The active electrode represented by a small vessel prepared as described above, is placed at the end of the table conveniently for him to put the toes in it. Further technique is the same as that previously described.

Ankylosis of elbow joint: The active electrode in the form of a folded towel is wrapped around the elbow joint, and the inactive electrode applied to the forearm. The nearest edges of the two electrodes should be three to four inches distant from one another. The patient may sit on the inactive electrode.

Instead of a towel employed as the active electrode being wrapped around the joint, a deep vessesl filled with the solution and prepared as discussed above may be used. The elbow is immersed in the vessel and rests on a pad placed at the bottom for the patient's comfort. The inactive electrode and the interrupted sine wave treatment are the same as previously discussed.

Frozen Shoulder

Ankylosis of the shoulder joint is known as the frozen shoulder, also as periarthritis, etc.

Pathology.—The condition is an inflammatory process of various structures of the shoulder joint. Adhesions are formed and adhesive tenosynovitis and adhesive bursitis (subacromialis) result. Many other structures making up the joint may become involved in the process, e. g., the capsule of the joint, the sheath of the deltoid muscle, etc. Of the muscle tendons and their sheaths affected, of special interest are the tendons of the supraspinatus muscle and the long tendon of the biceps. The former undergoes necroses. An exudate appears and a great amount of fibrin (later fibrous connective tissue) is formed, being responsible for the adhesions binding together adjacent structures of the joint. The involvement of the long biceps tendon and sheath is manifested almost universally by sharp tenderness over the region of the bicipital groove where this tendon glides with every motion of the shoulder joint. Experience has shown that when this tendon or its sheath or both are affected the condition is most difficult to treat and a great deal of treatment

may be necessary to get desired results, especially if the condition is of long standing.[2] This is probably due to its geographical position, being situated deeper than all other structures in the shoulder, namely, in the groove.

I have been able to distinguish two forms of frozen shoulder from the point of view of therapy: one without calcific deposits (except for an occasional fleck of calcium revealed by x ray which should be totally disregarded); and the other with calcific deposits, i.e., a frozen shoulder complicated by the presence of calcified bursitis, or vice versa. It is, however, a curious fact that the presence of the califc deposits warrants a more favorable prognosis.

Treatment

Type I: From the pathology of the frozen shoulder it is evident that we have here two conditions: 1, an inflammatory (chronic) process, and, 2, adhesions. The patient may suffer considerable pain constantly even when at rest. In long-standing cases (one patient gave in her history the duration as two and one-half and another as eight years) the pain may be felt only on motion of the shoulder. If pain is present at rest, it is a sign that the inflammatory process is still active. In such cases we have to treat first the inflammation. Trial and error, coupled by careful observation and sufficient experience have shown that the magnesium ion transfer is specific for the control of the inflammatory process and its symptoms in a certain class of conditions to which the one discussed here belongs (4).

Technique of the magnesium ion transfer: Wring out towels from a one percent cool solution of magnesium sulphate. Fold them in a pad of eight layers' thickness and of a size large enough (say six inches square) to cover the entire shoulder joint and place it there. Place a piece of block tin, say three inches by four inches on the pad (over the joint) and hold in place by a bandage. This is the active electrode. Attach to it the cord from the positive pole.[3] The inactive electrode is placed on the cervicodorsal region as described above. Time of treatment is three quarters of an hour. Employ this treatment daily until the pain is gone. In severe cases, after the seance is completed, the towel of the active electrode is left on the shoulder. It is covered entirely with oiled silk (the metal is of course removed) and bandaged around to hold in place. The patient is instructed to keep it wet until the next visit by pouring into it now and then a little cool water (see treatment of acute bursitis, 4).

When the inflammatory process is well under control, i.e., the patient complains no more of pain at rest, we start the treatment of the adhesions. The technique here is the same as for the pain, except that the solution is made up of sodium chloride and is hot, and this treatment is followed by the interrupted sine wave current.

[2]It may be of interest to mention here Mock's statement with reference to time of cure, Says he (5) ". . . the time of treatment with recovery is double the length of time elapsing since the injury.

[3]The magnesium ion is introduced into the body from the positive pole.

Variation of technique for the treatment of the adhesions: Two electrodes of equal size (four inches by five inches) are used. One, homemade soaked in the solution, is the active one. It is placed at the anterior surface of the shoulder joint. The other homemade electrode, or a readymade surface pad electrode, soaked in plain warm water is placed at the posterior surface of the joint opposite the active electrode. The remainder of the technique is as previously described.

It is important to keep away from the cardiac region when the left shoulder is treated.

Report of case.—Mrs. L., aged fifty, suffered from a frozen left shoulder. She had severe pain and limitation of motion of the joint. She had been treated for eight months by several physicians who employed diathermy, "injections" (one administered penicillin!) and by x ray. The treatments aggravated the condition. The pain became so unbearable and so severe that it drove her almost insane and she was, as she stated, on the verge of commiting suicide, thinking of the probable hopelessness of the suffering. "Stretching" was advised, which she feared and refused. In this condition she came under my care. Physical examination of the shoulder revealed great tenderness at various points, and almost complete limitation of motion of the joint. There was also some tendernesss of the muscles of the upper third of the arm and of the left part of the shoulder girdle, and there was also moderate atrophy of the muscles about the joint. X ray was negative. Diagnosis: Frozen shoulder (periarthritis) of a severe type. The patient was treated in accordance with the method described in this paper. She received a total of sixty-eight treatments with one hundred percent recovery.

Type II: In the management of bursitis with calcific deposits complicated by frozen shoulder the patient received at each visit two separate treatments, one for the calcified bursitis (its technique is discussed elsewhere in my work on bursitis, 4); and one for the adhesions as discussed above. The latter treatment follows the former.

Case report: Mr. B., aged sixty-two, suffered from bursitis with calcific deposits complicated by a periarthritis (frozen shoulder). He had great pain, worse at night. His physician, Dr. C., referred him to various specialists who treated him by x rays, diathermy, and "injections" but without appreciable results. Eventually he was examined by a well known orthopedic surgeon, who reported his findings to Dr. C. The following is a copy of that report (given to me by Dr. C.):

"Dear Dr. C.:

Many thanks for referring Mr. B. to me. His shoulder pain is, I believe, due to a rather extensive deposit of calcium in the supraspinatus tendon. X ray pictures show that the deposit has increased in size. It can, I think, be cured by means of the aspiration method. This is done under general anesthesia and x ray control and requires hospitalization. The shoulder is then thoroughly stretched so as to break up the adhesions which have formed."

Dr. C. feared to have his patient undergo such a torturous procedure . . . Eventually he referred Mr.

B. to me. The patient received daily treatments as outlined above. He made twenty-three visits, resulting in complete recovery, without causing the least pain.

Short Wave and Long Wave Diathermy in Ankylosis of Joints

Studying the effect of the "system" of methods discussed in this paper and the effect of short wave and long wave diathermy on ankylosis of joints I have come to the following conclusion: The "system" gives the best and greatest percentage of results, over ninety-five percent. The results achieved by short wave treatments are not at all encouraging. It seems to be a fact that the shorter the wave length the less is its usefulness in joint ankylosis. Concerning the employment of the long waves in the therapy of this condition I may say that these waves are of some value. However, this modality too, often discourages the operator. I believe that the fault may lie in the technique. With reference to shoulder adhesions I offer, therefore, my own technique which is as follows: One electrode three and one-half inches by four inches or larger is placed over the region of the shoulder joint. Another electrode consisting of a cuff about four inches wide, is placed around the arm. The upper border of this electrode falls about three inches below the lower border of the tendon of the pectoralis major. By this technique the thermal energy is directed also to the region of the axilla, influencing favorably the adhesions which are formed in that region of the joint. If a "half cuff" is used it is applied to the inner surface of the arm embracing a little more than one-half of its circumference. This long wave diathermy technique could be employed by those who for some reason cannot employ the ionization-sinusoidalization method. In stubborn long-standing cases of shoulder ankylosis the diathermy treatment may precede the ionization.

A combination of the cuff method and sine wave treatment (the "cuff-sine method") the latter following the former, is of interest.

Wrist ankylosis: The active electrode is applied to the wrist joint and the inactive one is placed in the palm of the hand.

Technique of the preparation of the inactive electrode: A towel wider than the palm of the patient's hand is wrung out of plain warm water and wrapped around a piece of block tin one inch wide and long enough to protrude from the towel to permit attachment of the cord. The patient holds this electrode in the palm of his hand, closing the fingers over it. The cord from the positive pole is attached to the metal. If the electrode is too bulky (and bulky it should be) and the patient cannot hold it firmly enough, a bandage is tied around the hand. The remainder of the technique is as previously discussed. A vessel filled with the proper solution may be employed as the active electrode. The inactive electrode could be placed at a convenient part of the body, etc.

Ankle jojint ankylosis: The active electrode is applied to the ankle joint, and the inactive one to the plantar surface of the foot. (A vessel may be used as the active electrode.)

Ankylosis of both ankle joint and phalanges of foot; wrist joint and phalanges of hand: In cases where both the wrist joint and phalanges of the hand are ankylosed, or the ankle joint and phalanges of the foot are both involved, the active electrode is a vessel as above described. It is deep enough so that the solution may well cover the entire wrist or ankle joint. The remainder of the treatment is as discussed above. Ankylosis of carpals or metacarpals or carpometacarpals or tarsal etc., is treated in the same way.

Case Reports

CASE I.—The patient was a young man, eighteen years of age, with a history of fracture of the right elbow joint, which had resulted in ankylosis (fibrous) of the joint whereby the forearm became fixed to the arm at a right angle. He had suffered for a year before he came to me. The "baking", massage and manipulations he had received in a clinic caused only "pain and agony", as he stated. The joint was restored to normal, painlessly, by the method above described.

CASE II.—Mrs. F., aged forty-three, was referred from the arthritis clinic. She had suffered from ankylosis of both knees for five years. The etiology was rheumatoid arthritis. Her knee joints were fixed at a certain angle to such a degree that she walked in a semi-squatting position. She was treated by one of our staff physicians very skillfully with diathermy, accompanied simultaneously by an exercise in the form of a to-and-fro motion of the lower legs for a period of five and a half months without any results. She was then referred to me. Treatments with sodium salicylate ionization followed by the interrupted sine wave current, which were given three times a week for four months resulted in an uneventful recovery.

CASE III.—A nurse at Mount Sinai Hospital met with an accident cutting through the extensor tendons of the phalanges of the left hand. After a successful surgical repair ankylosis of the phalanges set in resulting in "clawhand". This was cured without causing the least pain to the patient. The treatment with the interrupted sine wave current was carefully managed so as not to damage the surgical work.

Rationale of the Treatment

The three drugs which I have used in the treatment of ankylosis are distinguished by their "lytic" action, i.e., they are capable, when employed in ionization, to soften and "liquify" fibrous connective tissue. The same can be said of the negative pole from which they are introduced into the tissues. The lytic effect of the negative pole and the lytic effect of the drugs both together, in combined action, in the ion transfer treatment, present, apparently, a powerful means of softening the fibrous connective tissue which is responsible for the ankylosis. Then follows the action of the interrupted sine wave current, which, by its manipulative power, severs the softened adhesions. Furthermore, the treatment in-

fluences favorably the hydrogen ion concentration(9), improves metabolism, circulation, etc. In a word combined ionization-sinusoidalization treatment does, apparently, all that is necessary for the ankylosed joint to be restored to normal. Aside from any scientific basis of this system, however, it is the results obtained in thousands of patients that confirmed its definite therapeutic value in the treatment of fibrous ankylosis. It should, however, be pointed out that in some cases sufficient time and patience in addition to skill and experience are necessary to get desired results, which I believe can be obtained even in severest cases at least in ninety-five percent of them.

Summary

A system of methods for the safe and painless treatment to restore joints crippled by fibrous ankylosis, offering definite results, is here presented. It is my original work based on experience with thousands of patients during a span of nineteen years in five hospital clinics.

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A QUIZ FOR THE FAT

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Obesity is largely a psychosomatic problem in which overeating is resorted to as an outlet for the trials, worries and tensions of existence. Excess eating is too often the expression of a maladjusted pattern of life. Instead of rationalizing, the individual seeks solace and relief in eating beyond bodily needs. Given a set of tensive circumstances, for every person who worries himself thin there are three who gorge themselves fat.

Overeating may become just as compelling a habit as the alcoholic or narcotic habit, and efforts at correction may appear quite as futile. This is especially true of severe or advanced cases, unless the physician takes time and pains to teach his patient something about the cause, dangers and treatment of overweight. This is the essence of psychotherapy.

Psychotherapy with a view to making the individual weight and calorie conscious is the prerequisite to success in treatment. As part of our psychotherapeutic effort during the past few years, our patients have been receiving on their first interview the following stereotyped catechism, and we have been delighted with the improved cooperative spirit and tempo of reduction even in apparently stubborn cases. Here it is, in the form of twenty-two questions and answers:

A Quiz on Safe Reduction

1. *What is obesity?* Obesity is overweight. If an adult of average size and build is twenty or more pounds overweight, he is the victim of obesity.

2. *What is the cause of obesity?* Eating more than the body requires. Regardless of how little you eat, if you are fat you are eating more than you need.

3. *What about the glands?* The glands may be faulty in the minority of cases. But even in glandular cases the fat person eats too much. If you believe that you are suffering with a case of the glands gone wrong, don't be your own doctor. Consult the physician for diagnosis and the remedies required in treatment.

4. *How about heredity?* Heredity is an uncommon cause. Most often the reason for obesity in several members of the same family is the common family habit of eating too much.

5. *How about the appetite?* Appetite and hunger are exciting causes of overeating with overweight. Ignore your appetite and hunger for two weeks and they will ignore you. See your doctor if you haven't the courage to fight it out yourself.

6. *What are the chief complications of obesity?* Diabetes, high blood pressure, kidney disease, heart disease, and arthritis, all leading to reduced life expectancy. There is a direct relationship between weight and longevity. Life insurance statistics point out that at the age of fifty-five, a twenty percent overweight increases the death rate twenty percent for that age; a forty percent overweight increases the death rate to sixty-five percent above the normal.

7. *What are the principles of a reduction plan?* Reduction in food intake; reduction in starches, marked reduction or complete avoidance of fats, a normal amount of proteins, reduction of water and salt intake to a minimum, the assurance of a sufficiency of vitamins and minerals, an increase of exercise where permissible, and a spirit of honest teamwork and optimism.

8. *How little must I eat?* This is subject to individual variations. The adoption of a dependable

submaintenance diet is of first importance. This is the amount of food somewhat less than is required by the individual's ideal weight and may vary between two-thirds and one-fourth the amount ordinarily consumed by the stout person. With minor variations, this is continued during the time required to effect the desired reduction. Then the maintenance diet is begun, which is more than the amount contained in the submaintenance diet. It is the caloric intake calculated to prevent a rise or further lowering of the weight achieved.

9. *What foods must I especially guard against?* Fried foods, pastry, ice cream and sweets. Reduce bread and potatoes to less than half the customary allowance.

10. *What foods may I take freely?* The vegetables poor in starch but easily digested, such as lettuce, broccoli, spinach, carrots, tomatoes, celery, asparagus, and rhubarb. Such vegetables are low in caloric value, high in vitamins, minerals and roughage. They fill that empty space in the stomach and thereby overcome the discomfort of undereating.

11. *How about a snack between meals?* If you eat irregularly or too often—if you eat the least bit too much—your weight may rise and your prospects of success in the long run may fall. Nature is a severe bookkeeper. Don't eat between meals!

12. *How about alcoholic beverages?* Alcohol is fattening and should not be taken during reduction efforts. The average glass of beer, or cocktail, or other "hard" drink is worth from one hundred to one hundred fifty calories. Moreover, such drinks increase appetite and thus may nullify the good already accomplished by previous sincere cooperation.

13. *How do I keep an inventory of my progress?* By weighing yourself on the same scales (provided they are accurate), at the same time of the day, with the same clothes on (or in the nude) twice a week and noting the figure in your dietary diary. Oh yes, you must keep a dietary diary! Its fearless honesty is good for your morale!

14. *How rapidly should I reduce?* This depends upon the degree of overweight, your age, and your state of general health. Generally speaking, with an excess of fifty to one hundred pounds, the average reduction rate may be ten to twelve pounds a month for reduction of the first twenty to thirty pounds. Then the tempo of reduction is lessened to about four to six pounds a month until the goal is reached. In the event of undue tardiness of your reduction process, consult the doctor.

15. *Must I diet all my life?* Yes and no. Lest you remain fat all your life, you must be careful all your life not to overeat. This caution becoming a habit, is no more a restriction or annoyance than any other habit of life.

16. *Is exercise necessary?* Yes, but first discuss this with your doctor. He may give you special orders to conform with your special needs.

17. *May I smoke while reducing?* Yes, but don't poison yourself by *excess* smoking. Moderate smoking may even help to curb the appetite and hunger. And, by the way, if you value your sleep, don't impair it by smoking too close to bedtime.

18. *How about my bridge parties?* Social gatherings are usually accompanied by tempting "eats." Unless these feedings can be avoided it is wisest to deny yourself such contacts until the reduction cure is successfully terminated. Beware especially of card parties where your fat friends narrate dramatic tales about the "harm" of reducing. They want you to stop because they lack the courage to reduce and are envious of your improving figure.

19. *How about those advertised reducing cures?* These are usually disappointing and even dangerous. Resist the lure of such alleged short cuts in the "slimming" process as food fads, patent medicines, purgative salts, reducing creams, mechanical contraptions to reduce fatty areas, and the various "slimming salons." Safe reduction is best accomplished with the aid of your physician's advice. His counsel will be the result of the consideration of your past medical history, your present physical condition, your personality, eating habits, and the result of basal metabolic and other tests if necessary.

20. *Should I have reducing medicine?* Usually not, unless your doctor prescribes it as individually essential. You may require medicine to reduce appetite, or to increase the oxidation of your food, or to correct glandular defects. But remember that strict obedience in the carrying out of dietary instructions is the first principle involved in the successful outcome of your case.

21. *Is age a factor in reduction?* Yes. Youngsters to age 20 respond exceptionally well even to severe reduction efforts and reach normal weight within a reasonable while. However, the older the very stout individual the greater the need of restraint in the amount of reduction. In middle age with the skin becoming inelastic, cosmetic problems developing after the loss of the first fifty pounds may become perturbing. Facial wrinkles are embarrassing and though a drop of seventy pounds may result in a happy reactivation of physical and mental capacities and improvement in circulatory reserve, the individual may appear prematurely senile. Therefore those having undergone a rather substantial reduction should be satisfied with a weight sufficiently short of the ideal to avoid cosmetic embarrassment.

22. *How sure am I of successful reduction?* Quite sure. Since food is the source of weight, there is almost no doubt of your success—*if you cooperate!* Obesity is the easiest of all maladies to cure!

1633 SPRUCE STREET

Army General Hospitals to Close

Three more Army general hospitals will close on September 30, 1946, according to a recent announcement by the War Department. They have been declared surplus to the needs of the Department on that date. With their closing, only nineteen of the sixty-five general hospitals which operated during the war will remain in active service.

FELON

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The subject has been done rather thoroughly many times, but as felon seems to be the worst managed surgical condition I do not feel impelled to apologize further for entering the field.

Definition.—Felon, synonym whitlow. A primary, violent, spreading, pyogenic inflammation in the distal phalanx of the thumb or a finger. The infection is situated in the connective tissue space in the palmar surface, in the socalled space, a misnomer by the way. The staphylococcus is the causal agent in nearly all cases. In many works the term felon is miscalled onychia and paronychia. It is neither of these, as it has an entirely different symtomatology and treatment.

The connective tissue at the tip of the thumb or finger makes a strong closed sac of surpassing impermeability, and in addition to this many trabeculae dip down from the integument to the bone dividing the pulp or pad into sixteen compartments. It is therefore not surprising that enough pressure is generated to cause atrocious pain and pressure necrosis of tissues.

The anatomical arrangement of the terminal segment of a digit is not constructed with a view to holding a profuse exudate, hence it follows that unless early and adequate relief are given results are bound to be bad.

Etiology.—An abrasion on the palmar side, which may be so small as to go unnoticed. A tiny sliver from a broom handle, a tiny thorn from a rose or bear berry bush may be the offending agent. A dirty screen door with broken wires produced two cases in a group of workers. Powdered glass will work through the integument and carry in the germ of infection. A locus minoris resisentiae as from a blow on the digit may initiate a felon. The worst one I ever treated came from a sliver of cooking pot enamel. Practically never is a felon produced from the blood stream or internal causes.

Symptoms.—There may be a little sharp pain in the digit which the patient ignores or hopes will subside of itself. A hot soak and a gentle scraping across the pad with a sharp blade will occasionally remove the thorn or invisible splinter of glass and the symptoms completely abate.

On the other hand in twenty-four hours the digit throbs, the pain increases and infection is definitely established. The patient holds the digit up and grasps and supports it with the sound hand. This gesture is characteristic of felon patients. The throbbing pain is intense and unremitting. There should be little difficulty in differentiating a felon from a superficial subdermal abscess. The symptoms in felon are formidable and unmistakable and leave no doubt as to their nature. The pain, throbbing, etc., yield to nothing but surgery.

The strong unyielding integument and fascia will in the majority of cases confine the condition to the end of the digit, seldom will it pass backward along the thumb or finger even in the mismanaged cases. Infection here is in a closed (and filled) box. I dislike the term "space", "compartment", etc. When the end of a digit is infected the pressure is high and sufficient to shut off the blood supply. The shaft and distal end of the bone succumb, the proximal end of the bone does not because its blood supply is not subjected to pressure; if the epiphysis is not damaged full regeneration of the bone is likely to occur in time. Whether the loss of the bone is due to pressure or pus has been vigorously debated. Bone cannot lie in pus long and not become infected but it is likely that pressure plays the principal rôle in the loss of the distal phalanx. If a diagnosis of felon has been made do not wait for the mythical benefits of "drawing" poultices or hot soaks. Hot soaks are fine after drainage has been established.

Do not ever wait for "fluctuation". Fluctuation can only arrive after there has been severe damage to the digit. In many cases the patient has already philandered away valuable time.

An x ray may be made of the digit but it in no way influences the first treatment of an established felon. X ray is a good method of checking the progress of the bone condition. Do not use the fluoroscope; fluoroscopy gives very poor detail; take x rays.

Treatment.—The treatment of choice is radical operation. The whole hand is soaked in a solution containing soap, lysol, and warm water; it is given to cleanse the hand.

Some form of anesthetic is necessary; some use one of the intravenous varieties, and some give gas. I use novocain and in this way. Three syringes are boiled and into each I put about ten drops of a one percent solution of novocain. I then tie a rubber band around the digit proximal to the field of operation. I prefer novocain to all other forms of anesthesia in felon operations. I use plain novocain; adrenalin should not be used in a digit for obvious reasons, and it is particularly contraindicated in felon.

I pick out some uninflamed spot and inject it and work along from there. I take plenty of time and secure complete local anesthesia. I use at least three needles, sometimes more, and do not inject the same needle twice. If a few simple rules are observed there can be no objection to the use of local anesthesia in felon. It is easy, simple, safe, and can be done in the office without an assistant. Much of the solution comes away after the incision is made. Inject and wait at least five minutes after the last injection has been made before proceeding with the operation.

The incision should be elliptical in outline and is made thus. Start at the side of the digit just forward of the distal crease and carry the cut forward around the end of the finger, stopping at a point opposite the starting point. The incision goes under

many synonyms such as "snake mouth", "fish mouth", "horse shoe", etc. Use a sharp blade, the most merciful knife is the sharpest (in surgery anyway). If the finger is wiped with a lysol solution the incision may be more easily made. The application of tincture of iodine, alcohol, or bichloride to the skin just prior to making the incision tends to make the cutting tough. It is conceivable that an old fashioned straight razor blade would make the best kind of incision in felon; I have not used one. I do use the pointed Bard blade. The incision should hug the under side of the bone but not damage the flexor tendon; this will not happen if ordinary care is exercised.

The incision being made the field is covered with blood, the abscess will be noted, and part of it may drop out at once, a soft grayish mass. Remove the tourniquet and give the digit a warm saline soak, wipe it off, insert a piece of gauze which has been well smeared with a greasy substance such as boric acid ointment or some of the well known black proprietary ointments of icthyl, iodine, etc. The ointment is put on to hasten the sloughing process, but more particularly to facilitate the removal of the wick, which is done the next day and the digit given a saline soak at 110° F. for thirty minutes. It may be done twice a day for the first few days.

The temperature of the water should not be hot, as we are dealing with devitalized tissues. At the close of the soak I pour in a solution containing sulfanilamide, urea, and benzyl alcohol. I do not use the sulfa powders in these cases. Wring a piece of gauze out in the solution, wrap it around the finger, dress the wound and put the hand in a sling. The patient is given a sedative with instructions not to take it unless the severity of the pain justifies its use. There is not much pain after incision; the fierce pressure being removed, the pain subsides rapidly.

There need be no fear that the incision will close prematurely. If it has been adequately made it will take full care of the condition to the end. Take an x ray and if it shows there is a free piece of bone, reach in with a forcep and pluck it out. If allowed to remain it will act as a rankling nuisance and retard cure. If the epiphysis has been spared the bone will regenerate.

One hears of bone felons, but this is a coined phrase. The bone condition is secondary to the infection of the digit and is always the result of neglect on the part of patient or doctor or both. Never philander with a felon. If you do not care to operate on it yourself refer it to one who will and disassociate yourself formally and legally.

Warm saline soaks are all that is necessary after the first few days as the sulfa solution dries up the epidermis and causes it to come off. Saline, always harmless, is a natural remedy of great value. It must be pure and sterile, in some institutions it is poor. I buy sterile saline tablets and make up my own solutions.

There have been criticisms of the "fish mouth" incision, but they are all without foundation. The tactile sense is not impaired as the cut is well away from the pad, and the socalled deformity soon passes away. If at the close of treatment, when the discharge has ceased, the gaping end of the digit can be pulled together with adhesive, this will minimize the scar.

Prognosis.—If the patient is seen early before improper incisions have been made and vigorous treatment given the condition will be cleared up in a few weeks, but if the case has been manhandled it may run from ten to twenty weeks. I have seen several of twelve weeks' duration; they were mismanaged cases. I have operated upon some farmer friends and one did his spring ploughing, felon and all, but then farmers are a hardy breed. Several other patients refused to lay off but returned to their laborious avocations (thus giving themselves a rough sort of physiotherapy not recommended in the surgical literature).

Few felon cases will require hospitalization, indeed it is better for the patient to resume some part of his work as early as possible. Too much unnecessary hospitalization induces a tendency to invalidism. Some patients and some doctors are hospital prone. The sooner any man is able to return to some part of his work the better for him. The end result will depend largely upon the case. If the patient has been given treatment by the factory nurse, or ill advised incisions have been made, look for a long illness and a more or less poor result.

Fortunately, Nature is a great mother and generally a serviceable digit remains in spite of the beating it gets. Even where most of the distal phalanx had to be taken out the rather shrunken and narrowed end was serviceable and the deformity minor. The maximum surgical fee for a felon in Vermont under the Workmen's Compensation Act is seventy-five dollars and this will take care of all early felon cases, but obviously it will not take care of a neglected, long drawn out case. Proper cooperation by patient, foreman, and doctor will go far to reduce the duration in some cases from twelve to three weeks, and in many cases allow the patient to carry on without any "lost time".

Japanese Activities in Medical Science

The Army Medical Library has received the final report of the committee for the technical and scientific investigation of Japanese activities in the medical sciences. This committee was established in Manila by the Office of the Chief Surgeon. During a period of three months, every city of importance in medical education and every first-class medical institution in Japan was visited. A vast amount of literature and information concerning all sorts of medical activity over the past twenty years became subject to examination. Many claims, some of definite scientific interest, were made by the Japanese. The Committee was unable to examine and properly evaluate all of these claims. They were not accepted as factual but were considered of interest and were reported. It is hoped to acquire in the near future through official sources, Japanese medical literature.

Editorials

Effects of the Atomic Bomb on Human Life and Health

It is yet to be proved that radioactivity from the explosions of atomic bombs is anything but a curse to humanity. So far we hear nothing of beneficial effects. At the San Francisco session of the American Medical Association, July 1st to 5th, 1946, both the Army and Navy exhibited data of interest to all doctors and public health officers everywhere. It is impossible here to give more than a few facts.

The atomic bomb produces air blast injuries and radiation blast injuries. Under the first heading we have flash burns from hot gases, flame burns from induced fires, fractures, contusions, lacerations, crushings from wreckage of buildings, etc., and gastrointestinal, pulmonary and tympanic disruptions from blast pressure.

Under the second classification we have thermal effects such as flash burns from infrared rays and flame burns from induced fires. There are also ionizing effects such as leukopenia, anemia, thrombocytopenia, epilation, and sterilization from gamma rays and neutrons. The remote effects on bone marrow and blood are of chief concern because of "delayed action".

A distinct feature of atomic fission is the tremendous amount of radiant energy it produces. The instantaneous and terrific radiant heat burned wood to a crisp before vegetation (grass) had time to wither. Strangely enough, some of the worst effects were found in persons who were sheltered indoors. An individual might be suffering simultaneously from blast, thermal and radiation injuries. Of eighty thousand who died in Hiroshima, and forty-five thousand at Nagasaki, it is impossible to say just what agent killed them, but those who died from short-wave radiation or neutron effects are of greatest interest.

Immediate effects were death, malaise, and fever manifested within twenty-four hours or less. Delayed effects were not amenable to study for days or weeks after the holocaust. Symptoms of irradiation-sickness were rife, such as nausea, vomiting, weakness, anorexia and diarrhoea. Leukopenia was the rule, and the white blood cells were as low as 200 per cu. mm. There was a kind of Ludwig's angina in the neck. Necrosis of the bowels (rectal wall) was said to be due to lack of leucocyte protection. The two conditions may have a common cause.

Bone marrow injuries could account for the blood dyscrasias. From three to five weeks after the bombing there were hemorrhagic deaths due to thrombocytopenia caused by radiation damage to megakaryocytes of the marrow. There were petechiæ, purpuric patches, and extensive ecchymoses. Massive hemorrhages from body orifices were common. Autopsy findings showed enormous hemorrhages into the pelves of kidneys, into the gastrointestinal tract, in the meninges and in the brain.

Some persons seemed well for weeks after the tragedy, but gradually went into a decline with red blood cells of a million or below. Here bone marrow from the sternum was either hyperplastic or aplastic. The aplastic marrow was red, due to sinusoidal hyperemia with no appreciable formation of blood elements. In fact the marrow often showed little more than reticuloendothelial cells.

In the gonadal system, sterility of the sperm was common in males but ova and corpus luteum were found in females. Whether they were viable is a question. The Navy in its *News Letter Bulletin* for April 26, 1946, concludes that "It will . . . be necessary to follow populations in Hiroshima and Nagasaki for many years to determine long-range results as to blood dyscrasias, alteration of resistance to diseases, and genetic changes induced by instantaneous doses of radioactivity". This seems to say that such activity may go on in the body for years and bring about disease and death gradually.

Colonel Paul D. Keller, M.C., A.U.S., published a paper entitled "A Clinical Syndrome Following Exposure to Atomic Bomb Explosions" in the *J.A.M.A.*, June 8, 1946. He made an intensive study of twenty-one patients in the Osaka University Hospital during August and September 1945. Among them were persons who had no outward objective signs, save, perhaps, epilation, but who subsequently developed severe clinical symptoms which ended ultimately in death in five instances. He seems to consider "safety" to be beyond a radius of two thousand meters. Delayed illness seemed to stem from a destruction or suppression of elements of the hematopoietic system, mainly granulocytes and thrombocytes, and to upset liver function. We then find anemia, hemorrhages, fever, weakness, albuminuria, decomposition products (tyrosin) and all those symptoms which are commonly seen in destructive internal lesions in the body. This was evidenced by rapid rates of sedimentation of erythrocytes. He notes: "The similarity of this illness to that following excessive irradiation of the body with x rays is striking."

What we do not yet know is the possible "spread" of radioactive energy to water, food, air and our environment in general. Does great distance from the radioactive center afford protection to citizens in other parts of the world? Fish is a common food. Can fishes become radioactive and transmit this energy to humans when served as food? If the upper air remains radioactive, can this powerful agency be brought to earth through wind or rain? About one year ago, films in Rochester, N.Y., were said to be "smoked" because they were packed in boxes made from straw taken in Kansas wheat fields. This "news" was carried in many newspapers. How much actually there was in the story has not been published as scientific fact. In any case it is an interesting theory. Are we to suffer from this Frankenstein of our own making? Time alone can tell, but it is just as well to "get the facts" if these can be obtained. However, fear of the atomic bomb is so generalized that one should be careful not to add more of it to the popular concept. Fear is useless unless we can do something to abolish it. We may yet have to abolish the atomic bomb, that is, if it can be done as a common gesture of *all* mankind and not by one or two nations.

Some Impressions of the A.M.A. Meeting in San Francisco

According to the calender there has been no general meeting of our national medical association for three years past. Therefore, we thought it a good opportunity to visit "the Coast", take in the meeting and make a tour north into the "Playground of the Northwest", explore the Yellowstone, and return to New York via Chicago. After seeing the Grand Canyon in Arizona, any city or other object made by the hand of man ought to look insignificant. It did and still does! To try to describe the wonders of *the* Canyon, remembering, of course, that there is also one in Yellowstone Park, would be wasting words. Too many authors have worn out typewriters in the attempt to do it justice.

The headquarters of the officials of the A.M.A. was in the St. Francis Hotel, Union Square, San Francisco. Although the published dates were July 1st (Monday) to July 5th inclusive, there was not much doing on the first day. Monday evening we ventured to take a look at the delegates and other famous personages in the lobby of the St. Francis. Our eye caught that of Dr. Fishbein who immediately came over and called us by name, correctly. Since we had not met in at least two years, and are only slightly acquainted, it was very flattering to be so well remembered. Mentioning this to the editor of the *J.A.M.A.*, he tossed it off with ease and spoke of books in which we had a common interest. A truly remarkable memory.

The general opening meeting was held in the Memorial Opera House on Tuesday July 2nd. This is a beautiful building which to this traveler surpasses in elegance practically anything of its kind anywhere in America or in Europe. Moreover the acoustics are about perfect. It is one of a group of buildings called the "Civic Center" which was widely publicized during the meeting of the UNO in San Francisco last year. The setting is ideal for a Convention of any sort. The Hon. Roger D. Lapham, Mayor, gave the address of welcome to the visiting doctors, and mentioned, facetiously, the strike of surface cars then in progress and the need for a lot of leg work. Installation of the new president, Dr. H. H. Shoulders, followed by the March from Tannhauser closed the impressive ceremony.

The scientific program, as always, was full of good "papers", but the "exhibition" in the Auditorium held the interest of many because much that one saw there had to do with the daily practice of medicine. The "professors" were there to show new techniques and demonstrate new methods. This was especially noticeable in the "fracture room" and in the orthopedic section. The demonstrators served practically all day every day, and seemed tireless in their efforts to drive home a point or elucidate a fact. Great credit should be given such men as Lahey of Boston and New of the Mayo Clinic, to mention only two, all of whom deserve praise.

Practically every "drug house" which has ever favored us with samples had a representative on the floor to answer questions, to offer a chair to the tired observer or to show some other courtesy. The book publishers were there in profusion too and practically all recent books were on the shelves.

Both the Army and Navy had splendid educational displays. Charts and models and specimens were shown to illustrate the work done during the war on malaria, syphilis and gonorrhea, and various tropical diseases. Plastic and reparative surgery were thoroughly exhibited through colored photographs, movies and models. The Navy had a "news letter" describing the biological effects of the atomic bomb, experimental granulocytopenia, penicillin in neurosyphilis, and a rehabilitation program for the blind, deaf and amputee.

The Medical Film Guild of New York City ran pictures daily. They also publicized the fact that "medical films that teach are available to local medical societies at no charge, projection service included." This is indeed an innovation.

Those who say that such "meetings" are designed to show off somebody's pet scheme for attaining notoriety, do a grave injustice to the whole plan for setting up a graphic representation of the "advances" which are constantly being made. One can read about these to be sure, but it is the eye through which most of us acquire knowledge, and it is the brain which converts images into thought and action.

It is nothing short of amazing to behold the handiwork of many hundreds of persons who first conceive an "exhibit", then set it up, often far from home, and describe it so that he who runs may read. The runner may do even more. He may go back day after day and always find some new and interesting and practical point which will serve him "back home". Certainly the "commercial side" of this Coast meeting and exhibition was kept in the background.

Specialization in Medicine and Surgery

In many countries, especially in the most civilized if such a term is appropriate in these go-ahead times, specialization appears to be the order of the day. The United States and Canada are the most conspicuous examples of the movement in this direction, while Britain is perhaps to some extent second. However, there still are divergences of opinion in regard to specialization since some think there is or there is likely to be too much. If a person specializes in one or a few subjects it is obvious that he should be expert in these subjects. To be expert, the person should in the first place have an aptitude for the subjects and in the second, should be well grounded on it or them from all points of view, especially from that of experience. Perhaps, like the poet, a medical specialist is born not made but be that as it may, experience is essential.

In the *Lancet,* June 22nd, a meeting of the Manchester Medical Society, which took place on April 3rd, was reported. At this meeting Surgeon Rear Admiral Cecil P. G. Wakeley gave an address in which he emphasized that specialization was required now more than ever. He pointed out wisely that a sound basis of practical medicine and surgery should be obtained before specialization was allowed, if medicine was not to be divided into special departments so divorced from each other as to retard progress. The speaker sketched a course which in his opinion should be followed before specialization was attempted. Indeed he thought that no one should begin to specialize without five years' training after qualification. Mr. N. A. Young, another speaker, suggested serving an apprenticeship with general practitioners, a custom in vogue in Britain during many years and only abandoned some forty or fifty years ago. Some of the most famous British physicians and surgeons learned some of the practical work of a general practitioner in this fashion; witness Hughlings Jackson and Jonathan Hutchinson. Both served during five years as apprentices to general practitioners; as a matter of fact, most of the old time British physicians and surgeons began their training in this way. But it is of little use for any to aspire to the heights of the medical profession as specialists if they have not an inherent aptitude for a particular branch. If they have this and have gained experience by a thorough grounding there is no reason why they should not reach the topmost rank.

News Items

Physicians and Surgeons Named as Consultants to Secretary of War.—The appointment of fifty-eight prominent civilian surgeons and sixteen leading civilian physicians as consultants to the Secretary of War through the Surgeon General has been announced. These men are all specialists in their respective fields, and are for the most part former Medical Corps officers who served with distinction during the war. General Kirk, under whose direction the armed services' medical consultant program was initiated during the war, termed the selections an important step in the advancement of military medicine.

Army and Navy Doctors Assigned to Veterans Hospitals.—Forty-one Army and Navy doctors have reported for duty in Veterans Administration hospitals in Pennsylvania, New Jersey and Delaware, and under a program worked out jointly by the Army, Navy and V.A., 1250 physicians have been assigned to V.A. hospitals throughout the U.S. to fulfill their obligations for two years of military duty after completing their internship. The new doctors, who have been commissioned either first lieutenants in the Army or lieutenants (j.g.) in the Navy, recently completed their internships under the Army specialized training program and Navy V-12 program.

Neuropsychiatrists Named Consultants to Army Surgeon General.—The appointment of eighteen civilian neuropsychiatrists as consultants to the secretary of war through the Surgeon General has been announced by the War Department. The medical scientists, who are located strategically throughout the Nation, are former Medical Corps officers who served with distinction during the war. Their appointment was made as part of the Army Medical Department's program to maintain the highest standards of medical practice. They will evaluate, promote and improve even further the quality of medical care rendered the American Soldier.

Annual Meeting of American Medical Association.—At the annual meeting of the American Medical Association, held in San Francisco, July 1-5, 1946, Dr. Olin West, Nashville, Tenn., was elected president-elect of the Association on a unanimous ballot. Other officers elected were: Dr. Edward L. Bortz, Philadelphia, vice president; Dr. George F. Lull, Chicago, secretary; Dr. Josiah J. Moore, Chicago, treasurer; Dr. F. F. Borzell, Philadelphia, vice speaker of the house of delegates; Dr. Charles W. Roberts, Atlanta, Ga., member of the board of trustees; Dr. Walter F. Donaldson, Pittsburgh, member of the judicial council; Dr. L. W. Larson, Bismark, N.D., member of the council on scientific assembly; Dr. Victor Johnson, Chicago, member of the council on medical education and hospitals; Dr. E. J. McCormick, Toledo, Ohio, and Dr. Thomas A. McGoldrick, New York, members of the council on medical service.

Sir Stewart Duke-Elder, London, England, was elected to honorary Fellowship in the American Medical Association. Sir Stewart is one of the world's leading ophthalmologists and has made notable contribution in his specialty.

Dr. Anton J. Carlson, Chicago, noted physiologist, received the citation and the Distinguished Service Medal of the American Medical Association.

In recognition of Dr. West's long years of faithful service to the American Medical Association he and Mrs. West were presented with a silver service.

Next year's meeting of the Association will be held in Atlantic City, N.J. June 9-13, and in 1948 the Association will meet in St. Louis, Mo., during the week of May 10-14.

Obstetrics and Gynecology Examinations.—The next written examination (Part I) for all candidates will be held in various cities of the United States and Canada on Friday, February 7, 1947, at 2:00 p. m. Candidates who successfully complete the Part I examination proceed automatically to the Part II examination held later in the year. All applications must be in the office of the Secretary by November 1, 1946. Candidates in military service are requested to keep the Secretary's Office closely informed of changes in address.

A number of changes in Board regulations and requirements were put into effect at the last annual meeting of the Board. Among these is the requirement that case records must now be forwarded to the Secretary's Office from thirty to sixty days after the candidate has received notice of his eligibility for admission to the examinations for certification. The Board also ruled that it will not accept the nine months residency as an academic year toward years of training requirements following the termination of the official period of intern and residency acceleration, April 1, 1946.

Applications are now being received for the 1947 examinations. Final examinations will be held in Pittsburgh, Pa., June 1-7, 1947. For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh 6, Pennsylvania.

Psychiatry.—A section on military psychiatry was approved for inclusion in the American Psychiatric Association at that organization's 102nd annual meeting held recently in Chicago. A standing association committee was also approved in the field of military psychiatry. Captain Francis J. Braceland, chief of psychiatry, Bureau of Medicine and Surgery, U.S. Navy, was elected chairman, and Dr. Lauren H. Smith, former Ninth Service Command Neuropsychiatry Consultant, was chosen secretary. Active participants in the new section are Dr. Malcolm J. Farrell and Dr. Norman Q. Brill.

Army Medical Department Awarded Citation by A.M.A.—A special citation for distinguished achievement has been awarded to the Army Medical Department by the American Medical Association. The presentation of the citation on a plaque was made to Surgeon General Normany T. Kirk at the ninety-fifth annual session of the A.M.A. in San Francisco. The citation read: "Special Citation for Distinguished Achievement to the Medical Department of the Army and to the civilian doctors of America who gave their services in the recent conflict and who made such outstanding contributions to the medical sciences."

Rockwell Kent Medical Drawings.—A portfolio of reproductions of the illustrations recently completed by Rockwell Kent is being offered to interested physicians and pharmacists by Schering Corporation. The original drawings by Mr. Kent were commissioned by Schering for use in promotion pieces. Each drawing portrays, in the artist's characteristic manner, the mental symptoms of a patient suffering from a specific endocrine deficiency. Widespread response to the drawings, coupled with many requests for copies that might be framed, led to the issuance of this finely printed limited edition of the drawings, by Schering Corporation of Bloomfield, New Jersey. The full color reproductions in the portfolio are eleven by fifteen inches, mounted suitable for framing, and are devoid of any advertising. These portfolios are available free on request.

Gastroenterology Awards.—The winner of its 1946 cash prize award contest for the best unpublished manuscript on gastroenterology or an allied subject, has been awarded by the National Gastroenterological Association. The winning contestant was Captain Irving B. Brick, M.C., A.U.S. whose paper on "Radiation Effects on the Human Stomach: A Preliminary Report" was selected by the judges. A check for $100.00 was presented to Captain Brick at the annual banquet of the association held in New York on June 20, 1946. The presentation was made by Dr. C. J. Tidmarsh, first vice-president of the Association. Certificates of merit were also awarded to Dr. Frank L. Apperly, Richmond, Va.; Dr. William Nimeh, Mexico City, Mexico and Dr. Juan Nasio, Rosario, Argentina. The winning paper, as well as those receiving certificates of merit, will be published in the *Review of Gastroenterology*, commencing with the September-October 1946 issue.

Health Commissioner of New York.—On May 24, Dr. Israel Weinstein was appointed health commissioner of the city of New York. Dr. Weinstein has been affiliated with the Health Department since 1924. He was graduated in medicine from the College of Physicians and Surgeons and holds a degree of A.M. and Ph.D. from Columbia University and also a degree of Sc.D. from New York University.

Dr. Weinstein was at one time associated with the late Dr. William H. Park as a bacteriologist and in 1936 became assistant director of health education.

Incidence of Tick-Borne Diseases in the Army.—Only nine cases of tick-borne diseases, four of which were Rocky Mountain spotted fever, have been reported in the Army since January. The War Department issued a warning, however, that the peak of anticipated cases was expected during July and August; after the first frost, ticks usually hibernate. Of the four cases of Rocky Mountain spotted fever, two were reported in O'Reilly General Hospital, Springfield, Missouri, and one each at Fort Bragg, North Carolina, and Camp Carson, Colorado. Other tick-transmitted diseases contracted were relapsing fever, "Bullis fever," Colorado tick fever and tularemia. The latter can also be contracted by handling various species of wild game. Colorado tick fever was contracted by two soldiers while cases of the other diseases have occured only once.

Centennial of Camden (N. J.) County Medical Society.—On May 12, 1846, a commission was issued by the Medical Society of New Jersey (founded 1766), at its eightieth annual meeting, held at New Brunswick, N. J., authorizing Doctors Jacob P. Thornton, and Charles D. Hendry of Haddonfield; Isaac S. Mulford and Richard M. Cooper, of Camden; and James S. Risley of Berlin, to organize at Haddonfield, N. J., a District Medical Society for Camden County, and on August 14, 1846, the society was organized. Doctors Thornton, Cooper, Hendry, Othniel H. Taylor, and Isaac S. Mulford were graduates of the University of Pennsylvania Medical School. Dr. James S. Risley, first president, was a graduate of Jefferson Medical College, 1844. Dr. Richard M. Cooper, was elected secretary, Dr. Othniel H. Taylor, vice-president, and Dr. Jacob P. Thornton, treasurer. A centennial celebration will be held this fall, under the presidency of Dr. H. B. Decker, Camden dermatologist. Dr. A. G. Pratt is secretary of the society. Doctors Isaac S. Mulford, Othniel H. Taylor, Richard M. Cooper, Bowman Hendry, Jr., A. D. Woodruff, D. M. Stout, J. W. Snowden, J. J. Jessup, H. Genet Taylor, J. V. Schenck, Thomas F. Cullen, Reynell Coates, T. G. Rowand, Duncan W. Blake, J. A. Armstrong, William H. Iszard, J. D. Leckner, H. H. Davis, L. F. Fisler, Alexander MacAlister, J. M. Ridge, J. R. Stevenson, E. L. B. Godfrey, R. C. Dean, and others were among the early active members of this hundred-year-old County Medical Society, celebrating its centennial anniversary this year.

Personals.—Dr. William E. Studdiford has been appointed chairman of the department of obstetrics and gynecology at the New York University College of Medicine and visiting obstetrician and gynecologist in charge at Bellevue Hospital.

Brigadier General William C. Menninger, former director, Neuropsychiatry Consultants Division, Office of the Surgeon General, was returned to civilian life after three and one half years of service. He will continue as chief consultant in neuropsychiatry to the Surgeon General and as director, Neuropsychiatry Consultants Division in a civilian capacity, but expects to return to his former practice as medical director, Menninger Psychiatric Hospital, Topeka, Kansas.

Dr. John Minor, Washington, D. C., was recently awarded the Legion of Merit by Major General Norman T. Kirk, The Surgeon General, in a special ceremony in Washington. He was recently named as medical consultant to the Secretary of War through the Surgeon General.

Dr. Clarence E. de la Chapelle, assistant dean and director of the post-graduate division of New York University College of Medicine, has been appointed associate dean of the College. Dr. de la Chapelle has been professor of clinical medicine at the College since 1938, last fall he also became director of the post-graduate division inaugurated especially to meet the needs of medical veterans.

Surgeon General Norman T. Kirk, U.S. Army, and Colonel Leon L. Gardner, M.C., director of Army Medical Library, have been awarded honorary memberships in the Brazilian Academy of Military Medicine.

Brigadier General Edward A. Noyes, Army Medical Corps, was recently appointed Chief Surgeon of the European Theater, succeeding Major General Albert W. Kenner, now on the staff of the Secretary of War.

Professor James Young, D.S.O., M.D., F.R.C.S., Ed., F.R.C.O.G., London, England, internationally known both for his distinguished clinical achievements and for his authoritative editorship of "The British Journal of Obstetrics and Gynecology", has been added to the editorial board of the *Quarterly Review of Obstetrics and Gynecology*, according to the Washington Institute of Medicine.

Dr. Edward H. Skinner, Kansas City, Mo., was elected president of the American College of Radiology at the annual meeting held in San Francisco on June 29. He succeeds Dr. Lowell S. Goin, of Los Angeles.

Dr. Harry H. Gordon, assistant professor of pediatrics, Cornell University Medical College, New York, has been appointed professor of pediatrics and head of the department at the University of Colorado School of Medicine, Denver. He succeeds Dr. Franklin P. Gengenback who is retiring.

Dr. Willis D. Gatch has resigned as dean of the Indiana University School of Medicine, Indianapolis. Dr. Gatch has also resigned all other positions on the faculty including a professorship of surgery which he held since 1912.

Letter from Britain

(From Our Own Correspondent)

In a Letter from Britain at the present time it is quite in place to write about the food situation. The quantity of food affects health directly and indirectly. As a matter of fact food in London, the provinces, and Scotland seems to have deteriorated in these respects since the coming of peace. Bread which after all is the staple food, the staff of life, varies considerably throughout Britain. Although the loaf made from mixed flour is rougher and of a color objectionable to some, it was recommended by the government, by the advice of those experienced in food value. Some years ago it failed to capture the approval of the general public in taste or appearance, in spite of the Government's recommendation. Food here generally, even if sufficient to maintain life, is lacking in certain essentials, especially so at this season of the year. It is deficient in quantity and quality, but the reasons for these defects are well understood. It is rather the kind of food which is not in keeping with the time of the year and lacks variety. There is not enough fresh green vegetables or fruit. British apples for instance are so scarce that they are seldom seen in shops or stalls. Oranges, grape fruit and bananas are something of a rarity and when such do land in this country they are reserved rightly almost wholly for children. And then there is the black market, said to be the main cause of exorbitant prices one pays for food of any kind. Of the black market the writer knows little and nothing of its ins and outs. Again the shortage of cargo vessels bulks large in bringing about these lean days. Perhaps, it is the elderly and old who suffer most from this state of affairs. Further it should be borne in mind that a person's occupation has much to do with the quantity and quality of food he or she requires. A man engaged in hard outdoor work requires more food and of a forceful quality than a man or woman working indoors at sedentary work of one kind or another. In any event it is the case that the inhabitants of Britain as a rule do not have enough to eat, nor is the food suitable in many, perhaps in most cases for their manner of living. It is probably similar in many respects the world over and is a matter of intimate interest and concern to everyone. For the maintenance of good health wholesome food in sufficient quantity in accordance with one's manner of life is absolutely necessary.

Claude Bernard

Although Claude Bernard was a Frenchman he did such wonderful work that he belongs to the world while science knows no boundaries. What he did for medicine and to uplift it is almost as well known in this country and the United States as in his native land. He had an amazing career. Born in comparative poverty, he rose by the use of his own great brains to become in his own special line perhaps the greatest medical scientist of any age or country. The excuse for this just paneygeric is that Monsieur Raymond Millet has written and published recently *Claude Bernard on L'Adventure Scientifique*. Of course, Bernard's main achievements were in the sphere of physiology which were preeminent and are familiar. He created almost a revolution in views of physiology by his researches and discoveries and most of his greatest discoveries were based upon accidentally discovered facts from which he derived larger results owing to his exceptional power of thinking physiologically. He was a pioneer in other directions. He did much to establish endocrinology on a firm foundation and was what may be termed a biological vitalist at one time, but like his forerunner Magendie afterwards gave it a wide berth. His exposition of the vasomotor mechanism was a great achievement and as all great geniuses he was inquisitive and what he did not understand he tried as ably as was possible to find out and more often than not succeeded. Monsieur Raymond Millet, Bernard's latest biographer has written a full and well proportioned account of his life and doings. In order to reach the pinnacle of fame Bernard had to climb a very steep ladder. He did so. In Monsieur Millet's life of this extraordinarily able man most of the high lights of Bernard are given. During his later years, he lectured at the College of France and the Sorbonne. Napoleon III was so impressed with his personality that he gave him two splendid laboratories at the Sorbonne and the Museum d'Histoire Naturelle and made him a senator. Also he was admitted to the Academie Francaise, an almost unique honor for a medical scientist.

Faculty of Ophthalmologists

Sir Stewart Duke Elder, the author of a scientific and up-to-date textbook of ophthalmology, is president of this faculty which has just issued its first annual report and includes the findings of the committees set up to consider school ophthalmic work and the definitions of blindness.

Sleeping Sickness in Tanganyika

It was stated in the British House of Commons that 5,372 cases of sleeping sickness among human inhabitants of Tanganyika had occurred during the years 1936 to 1945 inclusive, of which 2,527 were fatal. Of eighty-six cases reported up to the end of April this year sixteen were fatal. During the past ten years 1,150 square miles of land have been cleared of tsetse flies and 44,300 persons resettled in cleared areas. An additional 1,130 square miles are in course of reclamation. A further 1,200 square miles are being surveyed.

Health Centers in Britain

Health centers are being established in many parts of Britain. It has been said wisely that such centers should be formed for the purpose or in the direction of preventive medicine and not especially to treat the sick. As Mr. Bexan, the Minister of Health remarked aptly, we were striving to create a service which would make people healthy or we might create a nation of hypochondriacs. Therefore, it was important to pay attention to the preventive side

of medicine. It has not yet been decided whether to have a center providing a variety of sources or rudimentary consulting centers nearer the peoples' homes from which doctors could send their patients for more extensive examinations into larger health centers. Thus the British Government seems to be taking the lead in furthering preventive medicine.

Shortage of Nurses

In Britain generally there is a lack of and a grave shortage of nurses which brings about a dilemma and constitutes a serious impediment to the proper care of the sick and injured. This shortage appears to be increasing into a matter affecting the whole population. Not a day passes but that this question emerges into the limelight and at a time too when extremely radical reforms in the conduct of the medical profession and the hospitals are being suggested; thus the need for nurses looms large. It is superfluous to insist how necessary trained nurses are. Indeed, it may be argued that they are almost on a par with physicians and surgeons in regard to medical and surgical treatment and if enough nurses are not forthcoming, how will ambitious schemes of the government be carried out. A goodly supply of capable nurses is absolutely necessary to the success of the plans in view, to change the existing system of management of British hospitals from top to bottom and it is to be hoped that the gap or rift in plans for the reform of hospitals owing to the shortage of nurses may be filled as quickly as possible. It must be borne in mind that not only have times and customs changed but are still changing. The girls of today refuse to be tied down by restrictions. Even if as nurses they are well paid and housed in comfort they insist on having their freedom and having several hours a week to do as they think fit.

Hospital Dietetics

Dietetics in hospitals in Britain have been neglected, greatly so indeed, compared to hospital dietetics in the United States and Canada. It has long been recognized in these countries that an adequate and suitable diet goes a long way in the rehabilitation of a patient. Also it seems that in British hospitals the individual is not sufficiently considered. Perhaps, however, to treat the individual as well as the disease or complaint is scarcely feasible in hospitals. It is, however, obvious that a large number of hospital patients require special diets, for example, after abdominal operations for diabetes, peptic ulcer, nephritis, and so on. Of course, nowadays the availability of suitable food is a difficult problem; such food as vegetables and fruits are very difficult to obtain, and proteins are scarce and expensive. While the Ministry of Food makes special arrangements for diets for invalids no provision is made for illnesses, for the betterment of which special diets are required. In British hospitals, which include those of Scotland and Wales, unlike those of the United States and Canada, there are few dietitians. There appears to be a tendency to have such, but hospital service does not seem to appeal to many of the present generation in Britain.

Honorary Degrees at Cambridge University

On June 24th, Dr. Charles Herbert Best, professor of physiology and director of the Banting-Best department of medical research in the University of Toronto, was awarded the degree of D.Sc. Cambridge University, and a similar degree was conferred on Dr. Frank MacFarlane Burnet, director of the Walter and Eliza Hall Institutes for Medical Research, Melbourne.

Royal Institute of Public Health and Hygiene

Mr. William Feldman, D.Sc., of the Mayo Foundation, Minneapolis, Minn., at the Harben Institute, delivered the Harben lectures at the Harben Institute, London, on July 15th, 16th and 17th. His subject was the chemotherapy of tuberculosis, with special reference to the use of streptomycin.

Prize in Ophthalmology

The Ophthalmological Society of Britain has instituted the Treacher Collins prize of five hundred dollars as an award every three years for the best essay on a subject chosen by the council of the Institute. The next prize will be given for an essay on nutritional eye disease, which must be submitted before December 31, 1947.

Nursing

In 1900 we had ninety graduate nurses per one thousand physicians, 545 in 1910, and 1,029 in 1920. But physicians then (this was 1928, see May Ayres Burgess' *Nurses, Patients, and Pocketbooks*) complained that patients who needed the service could not afford fourteen dollars a day for round-the-clock nursing. Nurses were then accepted for the profession without adequate investigation of their fitness, adaptability, and temperament, and were "trained by selfish people for selfish reasons, and it is not surprising that they become actuated by selfish motives when they graduate." Of all nurses, eleven percent then had only eight grades of schooling or less, thirteen percent had one year high school, fifteen percent had had two years, and twelve percent three years. We also read: "Hospitals run training schools for two reasons. The first is that it is cheaper to run a poor school than it is to employ graduate nurses. Hospital trustees and administrators, however, have for so many years regarded themselves as public benefactors because they have been conducting schools of nursing that it is going to be a surprising and unpalatable suggestion when they are told that from some of them such educational service is not only no longer needed, but no longer desired. It is rather pathetic to listen to the occasionally sincere, but not especially thoughtful, representative of a hospital training school argue for lower state standards of registration on the ground that his hospital cannot afford to conduct a school which will meet minimum requirements." The author held that no hospital should be expected to bear the expenses of nurse education out of funds collected to aid the sick, nor should a hospital's financial difficulties be a determining factor in the establishment of a nursing school.

Book Reviews

Dermatology

Diseases of the Skin. For Practitioners and Students. By GEORGE CLINTON ANDREWS, M.D., associate clinical professor of dermatology, the College of Physicians and Surgeons, Columbia University. Third edition. With 971 illustrations. Philadelphia and London: W. B. Saunders Co., 1946. Pp. 937. Price $10.00.

Recent advances in delineating new skin disorders, defining their nature by means of the electron microscope and treating with sulfonamids and antibiotics have greatly modified this new edition. It includes sixty new skin diseases under the standard classification nomenclature compiled by the National Conference. After introductory chapters on anatomic and symptomatic diagnosis and therapy, the author presents the common dermatoses in groups based upon national clinical classification. The clear pattern of description is maintained, embodying all aspects of disease in simple terminology. Diagnosis is aided by clinical tests and striking illustrations. Treatment is limited to methods that have proved effective in the hands of the author. Each chapter is followed by pertinent references on the literature of all nations. Those disorders of the skin that reflect systemic disease are not presented as authoritatively. For example, purpura is not evaluated in terms of the changes in the clotting components on the one hand and changes in the vessel walls on the other, hence treatment is a conglomeration of measures not specific for any of these entities. The use of vitamin K in any form of purpura is out of the question. Since the book is only consulted for primary skin disorders the practitioner will find it a useful repository of valuable information for the mechanism and management of skin disease.

Problems of Old Age

New Goals for Old Age. Edited by GEORGE LAWTON. A collection of papers delivered in a course, "Mental Health in Old Age", conducted under the auspices of the Section on the Care of the Aged of the Welfare Council of New York City during the year 1940-1941. New York: Columbia University Press, 1943. Pp. 210. Price $2.75.

What the author calls a "conspiratorial collection of papers" aims to offer ideas concerning the nature and needs of old people. The point is emphasized that this is a young peoples' world, that the old feel neglected and often are, and that we are just beginning to realize how many more aging persons there are than formerly. Today we have nine million in the U.S.A. over sixty-five years of age; in 1980 we shall probably have twenty-six million!

With the science of geriatrics now well established, we shall hope for prevention of physical and mental decay, or, at least, "a delaying action". To be old and wealthy, even if ill, is not so bad as to be old and poor and ill. Social ostracism is likely, and the fact that one has lived too long is all too evident.

The topics of articles written by various authors and set together in this book range from old age at the crossroads, through adjustment of the life span to how it feels to be a woman at seventy-five. Need for supervision is mentioned, that is, just as one outlines a plan of play for a child, we need to plan the waking hours of the aged so that they will accept and enjoy our prescription. Even the kind of books to be read demands consideration. They need not be of the pollyanna variety, but they must be cheerful, interesting and free from murder, poverty and descriptions of worrisome diseases. The radio can be a help, but not those "shows" that provide the "soap operas" and family quarrels. More of the "life can be beautiful" type should interest those whose mentality is still firm.

Marriage of old people near the same age is not only permissible but helpful if companionship is sought, but marriage of an old man to a young woman is, in most instances, to be discouraged because it brings unhappiness to both parties . . . This is an interesting, thoughtful book.

The Extremities

The Extremities. By DANIEL P. QUIRING, Ph.D., head of the anatomy division, Cleveland Clinic Foundation and associate professor of biology, Western Reserve University, and BEATRICE A. BOYLE, ERNA L. BOROUSH, M.A., and BERNARDINE LUFKIN, A.B., Cleveland Clinic Foundation. Illustrated with 106 engravings. Philadelphia: Lea & Febiger, 1945. Pp. 117. Price $2.75.

The purpose of this atlas is to make clear to students of anatomy the origin, insertion, action and nerve and blood supply of the muscles of the upper and lower extremities. Only the left extremities are shown. The point is made that muscles have movement at their origins as well as at their insertions.

Original dissections afforded the bases of these drawings, and the page numbers in legends refer back to Gray or Cunningham. Motor points were tested on normal subjects, but since these vary in persons, the location of motor points is approximate and not definite.

Anyone who will take time enough to scrutinize these aids closely, will learn a great deal about the muscles of the extremities and the function of the bones to which they are attached.

Hematology

Hematology for Students and Practitioners. By WILLIS M. FOWLER, M.D., professor of internal medicine, University of Iowa. With a chapter by ELMER L. DEGOWIN, M.D., assistant professor of internal medicine. Illustrated. New York and London: Paul B. Hoeber, Inc., Medical Book Department of Harper & Bros., 1945. Pp. 499. Price $8.00.

In other days "the complete blood count" was merely an adjuvant in diagnosis holding a place comparable to laboratory reports on the kind of germs present in an infection. Hematology is now regarded as an integral part of "internal medicine". Strictly speaking there are no "blood diseases". What is found in the blood represents dysfunction in some other tissue or organ. A difficult and rather unfortunate word or phrase, "the hematopoietic system" is used to embrace, not only the circulating blood, but also those factors which produce and destroy blood cells. The terminology is replete with such words as "reticuloendothelial", "myelocytes",

"granulocytosis" and "polycythemia". This makes for difficult reading, but now that it is so well established, there is no simplification possible. Those who know Greek will, doubtless, find it all very "easy." An understanding of the anatomy of bone marrow is basic since, at this stage of our knowledge, both red and white cells are formed there. The spleen supplies lymphocytes from its malpighian corpuscles. There may be other sources of supply when the marrow is functioning improperly, for our knowledge of the blood system is not yet fully complete. Chapter 22 deals with the blood picture in certain infections. This will interest all who "see" malaria, filariasis, trypanosomiasis, relapsing fever, acute bacterial endocarditis, etc. Concerning the latter it is good to know that an alpha hemolytic streptococcus is now recognized as the common cause. With the advent of penicillin, streptomycin and other like agents, we are advancing toward the conquest of this life-shortening disease, the portal of entry for which is possibly through the tonsils or respiratory tract.

This is a useful book which can be studied with profit by any doctor of medicine.

Proctology

Ambulatory Proctology. By Alfred J. Cantor, M.D., associate proctologist, Kew Gardens General Hospital, Long Island, N.Y. With a foreword by Beaumont S. Cornell, M.D., editor, *American Journal of Digestive Diseases.* Illustrated with 347 special drawings on 275 figures. New York and London: Paul B. Hoeber, Inc., 1946. Pp. 524. Price $8.00.

The very phrase "ambulatory proctology" denotes that surgeons have come a long way in treating painful diseases of the anus and rectum without hospitalization. However, the terms "surgery without the knife" and "office methods" have done much to injure nonhospital practice. Hospitalization is required when the patient is unable to go home, or when it might be dangerous to release him because of hemorrhage, infection, embolism or some other disturbing condition. There are also patients who "dread" a hospital and implore the surgeon to do all he can in the office operating room. The economic factor, too, is important to a large number of patients who "cannot afford to lay up".

A basic surgical experience is the first essential in this work, for a proctologist may run afoul of unsuspected cancer and be obliged to do a "major operation". This, of course will call for hospital care. The same is true of pelvic conditions in the female. Dr. Cantor believes that the field should be widened to include opening the abdomen, if necessary, and removing a kink or an appendix if encountered. If a man is a trained surgeon and is familiar with all that goes along with this designation, he should be ready to carry his patient through to restoration of health, and not be obliged to call on some "general surgeon" to finish the job he undertook.

After the usual preliminary chapters on anatomy, diagnosis, anesthesia, management, etc. there is a chapter (No. 5.) on pediatric proctology. Then come discussions on anorectal fistula, prolapse and procidentia, the infective conditions, colitis, dysentery, the venereal diseases, parasites, diverticulitis, tumors, benign or malign, pilonidal cysts, anal incontinence, and electrosurgical technique.

The book is a satisfactory and well-illustrated text which can be of great value to the surgeon.

The Electrocardiogram

The Fundamentals of Electrocardiographic Interpretation. By J. Bailey Carter, M.D., assistant (Rush) professor, department of medicine, University of Illinois College of Medicine. With a foreword by H. B. Williams, M.D., Dalton Professor of physiology, College of Physicians and Surgeons, Columbia University, N.Y. Illustrated. Second edition. Springfield, Ill., and Baltimore, Md.: Charles C. Thomas, 1945. Pp. 406. Price $6.00.

Credit is given to Einthoven, who in 1906 published a "paper" *Le Télécardiogramme,* for founding clinical electrocardiography. Within a year apparatus was devised and made available so that these instruments of precision are now in use in all hospitals and in many private offices of physicians . . . There still remains the problem of "interpretation" which is difficult but not insurmountable. The important thing is not to "read in" too much. A good, thorough, clinical study of the patient without the electrocardiogram is to be recommended; then the instrument can be brought in to confirm the findings.

Coronary disease may be the most evasive from any viewpoint. A patient with a seemingly bad prognosis may, under good management, produce a collateral circulation and live for many years. Here electrocardiography may help prove or disprove the tentative diagnosis of "occlusion." This is especially true if serial curves at proper intervals are studied.

The EKG instrument, like the stehoscope, is only a means to an end—the end is proper management of an already damaged heart. What we need to know above all is how to *prevent* heart disease or how to cure it in the earliest stages. This knowledge is still afar off, but it will be encompassed some day. Research should flow into this channel rather than into pathology. We already know what a "bad heart" looks like at autopsy. What we do not know is how to keep it from geeting that way.

Hippocratic Wisdom

Hippocratic Wisdom. For him who wishes to pursue properly the science of medicine. By William F. Petersen, M.D., Chicago. Illustrated. Springfield, Ill.: Charles C. Thomas, Publisher, 1946. Pp. 263. Price $5.00.

The "wisdom" of Hippocrates may seem to us "moderns" something weird and afar off. And so it was in point of time, but in point of human achievement and viewed from an intellectual level, it ranked and still ranks high in human history.

He knew that ice and snow were to be found at the poles of the earth, and drew conclusions from the winds in fall and winter as to their effect upon diseases. This he called "the power of the atmosphere".

His observations upon erysipelas were accurate although he had no microscope and knew nothing of Streptococcus erysipelatis. Hydrophobia from the bite of mad dogs interested him, but he was puzzled by its distribution in India and Egypt, and by the fact that it attacks "animals with tight skin". He knew

that the poison was disseminated from the teeth of an animal and extended to the brain, eventually overwhelming the body with disease. His description of a person dying of this infection is quite accurate and horrifying.

Pneumonia, pleurisy and empyema he considered as sequential to each other. He noted sore throat (tonsillitis) and hoarseness. Muco-pus in the nasopharynx he observed was blown into the eustachian tubes and caused aural abscesses.

Fractures and dislocations were carefully studied and he describes methods of reduction. When fracture of the spine took place, the spinal cord was damaged and paralysis, partial or complete, followed. If the lower limbs and feet grew cold, death was likely to ensue. He did not know how to treat such cases unless "succussion on a ladder" or some other means of extension could be contrived.

Hippocrates was not merely a physician, but a philosopher who was interested in all natural phenomena and who drew extremely astute conclusions from what he observed. All of these things have been told many times, but it is good to find them so well set forth in a small book such as this which can be read with pleasure and profit by all.

Burma Surgeon Returns

Burma Surgean Returns. By GORDON S. SEAGRAVE, M.D. With maps by Phoa Lieng Sing and Lucas Manditch. Illustrated. New York: W. W. Norton & Co., Inc., 1946. Pp. 268. Price $3.00.

The author's first book on his war experience, *Burma Surgeon,* became a best seller, probably because it uttered the unvarnished truth about the conflict in the C.B.I. theater of operations. At Namkahm in Burma this medical missionary, his friends, nurses, natives and everybody who had hands built a hospital out of whatever they could put together. The Japs found the building very useful when they took over. Consequently, allied fliers had to bomb them out, and thus all of Dr. Seagrave's hard work went up in a cloud of smoke and dirt. However, like General MacArthur, he vowed he would return from the sad trek into India. So he did, and this book tells the story.

There was both action and inaction in the return engagement. When things slowed, the Staff was uneasy, irritable and critical of everything including the doctor whom they all loved. Throughout the narrative there is much concerning the nurses, (not all of whom were Burmese) their cute sayings and intensely human reactions to their environment. The uninitiate were amazed at the skill, endurance and great self sacrifice of these women. Staff surgeons, English and American, who came "to help" were almost contemptuous at first, but they soon learned to respect their associates, and to depend on them. How anything approaching sterile conditions at operations was obtained and maintained in the jungle is a mystery, but the results seem to have been excellent. Perhaps the hardihood of native soldiers, Chinese and other, had much to do with their recovery from operations on abdomen, brain, chest—any part of the body. They were used to adversity and were generally uncomplaining as to their wounds

The good doctor's forthrightness sometimes got him into a jam with the Baptist Missionary Society. "Cuss words" in the first book were criticized at home, and remonstrative letters were sent back to "the front but Dr. Seagrave took it all in his stride. In fact, he thought that there were times when mild profanity was something like a prayer in soothing jaded nerves. This "return" book should at least equal if it does not surpass the first in popularity.

Medical Practice

A Textbook of the Practice of Medicine. Edited by FREDERICK W. PRICE, M.D., consulting physician to the Royal Northern Hospital and to The National Hospital for Diseases of the Heart, London, England. Written by various authors. Seventh edition. London, New York and Toronto: Oxford University Press, 1946. Pp. xiv 2034.

This is the twenty-fourth year of publication of this important work. It is both comprehensive and authoritative, that is, authoritative as far as any book of its nature can be so termed. It embodies in succinct language the up-to-date views of British experts on the particular subjects upon which they write and the articles are signed. The subjects selected are representative of British teaching and the result taking into consideration especially that it was written during the worst war in modern times, may not inaptly be termed a triumph on the part of the editor and contributors. The last paragraph on page ten of the preface is worthy of attention. All aspects of medicine are considered, and prominence is given to diagnosis, prognosis and treatment. Twenty-eight new articles have been includeded and fresh material added to forty-eight other subjects, while thirty-two articles have been rewritten and fifty-six other articles revised thoroughly. Dr. Price writes the section on the heart. He is an authority, and with his contributors, has brought out a work worthy of its former editions, which is saying a great deal. The work is of international fame.

Physiology

Synopsis of Physiology. By ROLLAND J. MAIN, Ph.D., professor of physiology, Medical College of Virginia, Richmond. Twenty-one illustrations. The C. V. Mosby Co., 1946. Pp. 341. Price $3.50.

There has always been a clamor on the part of students and those taking refresher courses for knowledge in a nutshell. This has been supplied by epitomes of various kinds, quiz compends and syllabi. Physiology can be learned in theory from textbooks, but the laboratory must continue to supply "practical work". However, Dr. Main is right when he says that he sees no purpose in giving the pH of a dog's pancreatic juice when we already know the human norm.

It is in order, too, that some mention be made of disordered physiology as well as normal function; for it is in the former field that the general practitioner must labor. Take blood clotting, for example. One knows, of course, why blood clots; it is one of the numerous factors of safety in the human economy, otherwise one would bleed to death when accidentally cutting a finger. When blood fails to clot, there is a reason and it must be determined and

corrected before any surgical operation can be performed. Correction, however, is not always possible and so the surgeon must compromise as best he can, especially if faced by an emergency.

Anatomy and physiology are basic studies for every would-be doctor. Once away from undergraduate medical studies, he is inclined to neglect both for "clinical medicine". There is no such person as a good clinician who is not thoroughly grounded in these basic subjects. "Grounding" is nevertheless not sufficient. Most memories need jogging now and then, and here is a little book to do the necessary. It is a *multum in parvo* which can be highly recommended not only for its contents, but for its "pocket-size".

Personality Factors in Counseling

Personality Factors in Counseling. By Charles A. Curran, Ph.D., St. Charles College, Columbus, Ohio. With a preface by Michael J. Ready, Bishop of Columbus. With an introduction by Carl R. Rogers, professor of psychology, University of Chicago. Illustrated. New York: Grune & Stratton, Inc., 1945. Pp. 287. Price $4.00.

Professor Rogers informs us that "this research study was undertaken by a Catholic clergyman with psychological training". Bishop Ready states that personality factors in counseling, concern doctors, nurses, educators, social workers, priests and religious workers in general. That includes about everybody who at some time or other is in a position to give advice to those in need of it. Trouble begins when those not in need of advice have it handed out to them in large doses by people who cannot order their own lives with any degree of adequacy. Therefore, the need for trained advisers who have "mastered certain techniques". No sound basis for counsel is found in theorizing only. Experience is still the best teacher, but the scholar or learner must know how to apply it intelligently. It is the purpose of this book to do just that. How far it can or will succeed is again a matter of experience. Physicians have always been called upon for advice by individuals and by families. Sometimes the matter in hand lies far beyond their knowledge or "contacts". Hippocrates said: "Experience is fallacious and judgment, difficult". The wise Sir William Osler used that sentence on the flyleaf of the first edition of his *Practice*.

Hypnoanalysis

Hypnoanalysis. By Lewis R. Wolberg, M.D., lecturer in psychiatry, New York Medical College. Foreword by A. Kardiner, M.D., assistant clinical professor of psychiatry, Columbia University. New York: Grune & Stratton, Inc., 1945. Pp. 342. Price $4.00.

Part One of this volume is devoted to an intensive study of a single patient, Johan R., who, at forty-two years of age (1937) began to have self-condemnatory opinions which became tense, fearful and unreasoning. He took recourse in religion, prayed daily, but lost interest in his appearance, and refused food. All this is common enough. It is the method of "resuscitation" which engages the reader, and it seems to have worked.

Part Two considers the theory and practice of hypnosis in its relation to psychoanalysis. There are the recall of buried memories, transference, resistance, interpretation and other hypnoanalytic procedures.

World War II is bringing to popular attention the importance of broken morale and neuroses of all sorts. Hypnosis has relieved some, and high hopes are entertained for all the afflicted. The author and his friend, Dr. Kardiner, seem to fear that misunderstanding of the modern application of hypnoanalysis will be mistaken for the old quackery and thus be defeated by lack of confidence. The danger is real, but if the subject is properly taught to well-qualified medical men, there is nothing to fear from them. But they must be convinced of therapeutic adequacy. Moreover, this is not a field for exploitation if it is to remain within proper boundaries, and it cannot, in all probability, be learned and practiced by anyone and everyone. Neither can psychiatry or psychology or philosophy. This reviewer believes that much good can come from the study of a case history of this sort, although excessive detail, may seem boring, at times. However, the detail is often necessary before a complete understanding of mental processes can be elucidated.

Chemotherapy

Advancing Fronts in Chemistry. A series of lectures sponsored by Wayne University, under the direction of Neil E. Gordon, chairman, department of chemistry. Edited by Wendell H. Powers, assistant professor of chemistry. Volume II: Chemotherapy. Illustrated. New York: Reinhold Publishing Corp., 1946. Pp. 156. Price $3.25.

Wayne University in Detroit, Michigan, conducted a symposium on chemotherapy during February and March, 1945. Specialists in various branches of chemistry were invited to give lectures on such subjects as "high polymers". The six contributors named have made a clear presentation of their topic with the common purpose of being readily understood. Therefore, the book supplies an informative, historical survey of chemotherapy and recites some "unsolved problems".

In Chapter I Dr. Feldman of the Mayo Foundation deals with chemotherapy in experimental tuberculosis. In experiments on animals the writer states that "some definite progress has been made", and hopefully reflects that new and possibly thoroughly effective chemical compounds will come from the inventive mind of some research chemist. There is also the antibiotic field which has scarcely been touched as yet.

In Chapter IV, Dr. Harry S. Mosher, State College, Pa., recites his efforts to solve the malarial problem, but his results have been disappointing. "We have no drug which will eliminate vivax malaria from the human blood stream." This is the form most prevalent in the armed forces, and the one most likely to recur. Some twelve thousand chemical compounds were tested before atabrine! And the work must still go on, since no specific or sure-fire remedy is yet at hand.

For all who enjoy chemical formulae and "substitution" procedures, this book will be found stimulating.

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AUGUST 1946

Medicolegal Notes

Hospital Employees' Right to Strike

A strike by the employees of a hospital injuriously affecting the essential functions of a charitable hospital maintained for the benefit of the entire public is held to be improper and inimical to the public interest, and will be enjoined by the New York Supreme Court, construing sections 700 and 715 of the New York Labor Law. Such an injunction would not trespass on the right of the individual to quit work.

But peaceful picketing of such a hospital would not be enjoined if done in such a form as would not deter persons having business or professional relations with the hospital from crossing the picket line, and provided that the picketing would not otherwise interfere with the hospital's functions.

Justice Pecora suggested that the matters leading to the attempted strike in this case and to the picketing might be presented by the defendants to the attention of the legislature, which might "give adequate heed to the plight in which the employees of charitable educational and religious organizations presently find themselves, because of their exclusion, under the provisions of Sec. 715, from the benefits of that Article." (Article 20 of the Labor Law, embodying the declaration of the rights of labor). Society of New York Hospital vs. Hanson, New York Supreme Court, Special Term, 59, N. Y. S. 2d 91, 185 Misc. 937.

Compensation Claims Sustained

Evidence that the claimant suffered a cardiac injury while pushing an automobile from the path of another which was being driven into the garage where he worked was held to support an award of compensation. Shaw vs. Browers Garage, Inc., 268 App. Div. 59 N.E. 2d 793, 946, 51 N.Y.S. 2d 429. Affirmed 295 N.Y. 709.

The opinion of the Court of Appeals explained that the claimant on the day of the accident was washing an automobile and to let another car pass he was pushing this automobile, which weighed two thousand pounds. While pushing the car, the claimant experienced a pain in the heart; he immediately stopped work and in a few minutes collapsed. He was confined to the hospital for five weeks and the illness diagnosed as coronary occlusion. The employer stipulated that the only issue to be raised on appeal was "that of accident within the meaning of the law."

Evidence that a claimant, a waitress and general maid, sleeping in a bedroom on her employer's premises, jumped out of bed when called in the morning to serve breakfast and landed on the waxed hardwood floor, twisting her back and hurting her leg, sustained accident injuries arising out of and in the course of her employment. Mattison vs. Jenks, 51 N.Y.S. 2d 430. 268 App. Div. 946.

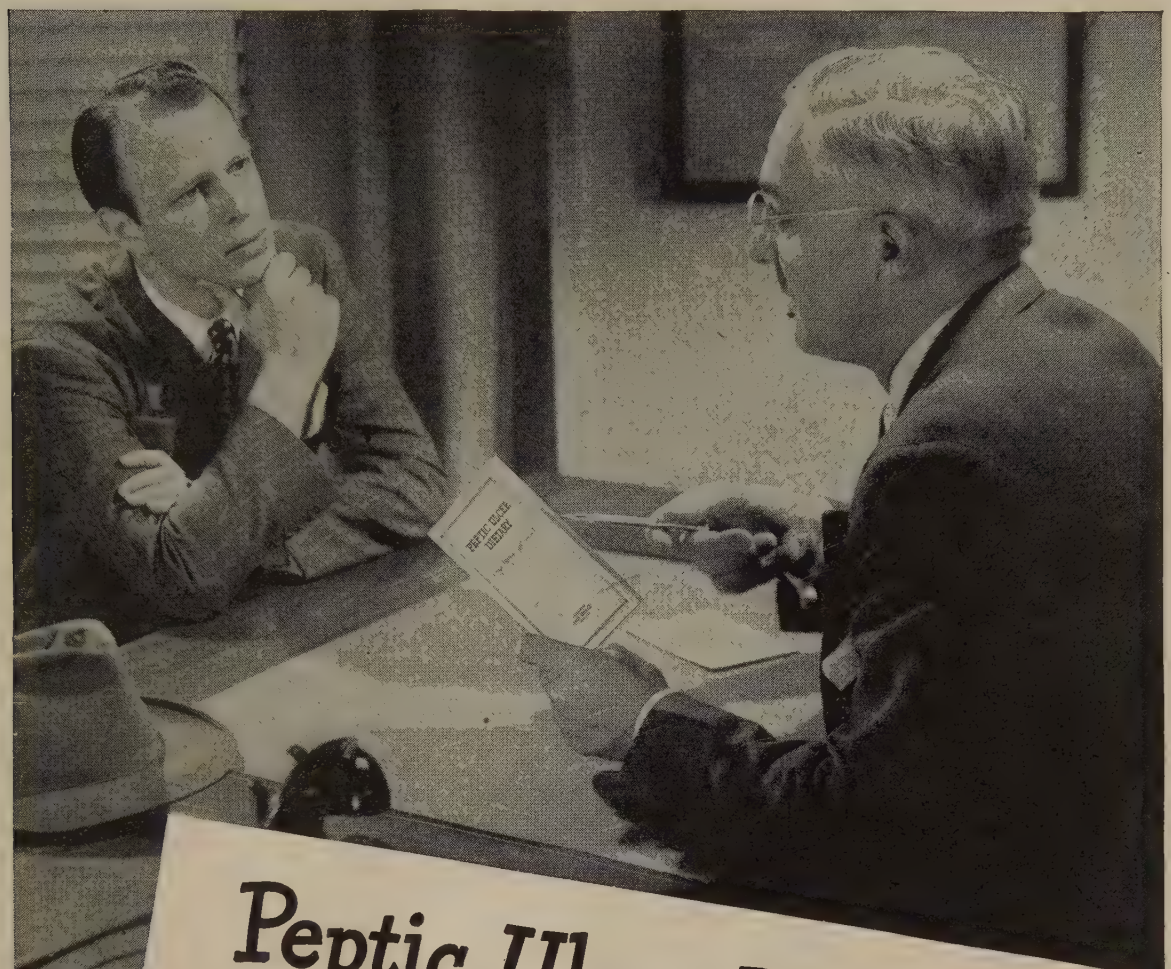
Casual Connection Between Prior Disease and Injury

A worker on blue denim contracted acute dermatitis, which was relieved by a few months' treatment by a dermatologist. She was awarded workmen's compensation and medical expenses for an accidental injury arising out of and in the course of her employment by the referee in the case. This was reversed by the commission.

There was no evidence establishing a casual connection between a prior eczema and the type of dermatitis diagnosed by the medical experts. On appeal, the Minnesota Supreme Court, Simpson vs. Gold, 22 N.W. 2d 922, reversed the commission's decision and remanded the case for further evidence to determine whether the dermatitis did arise out of and in course of employment, in which connection the question of aggravation should be considered by the commission.

Casual Connection Between Trauma and Carcinoma

In a proceeding under the New York Workmen's Compensation Act the decisive issue was whether a single trauma was a competent producing cause of the cancer in the claimant's breast. The Appellate Division rejected the objection that the doctor who testified in the affirmative on this question did not express his own opinion. The Workmen's Compensation Board's decision determining that a carcinoma of the claimant's left breast was casually related to an accident was affirmed, reversing a decision of a referee. Feldheimer vs. National Biscuit Co., Appellate Division, 61 N.Y.S. 2d 849.



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Critique

Soviet Health *Medical Officer* (British) commented, April 13, 1929, on Soviet health; interesting for a look-back. Death rate was high, but also birth rate; syphilis was 2.1 against 9.2 in New York, and "other puerperal causes" 11.9 and 38.2 per 10,000, respectively. Comment: "There is plenty to think about here. Soviet Russia is too often represented as being a land of wholesale murder, devastating plagues, promiscuous intercourse, and systematic abortion. The statistics show that these things cannot be. The report that the figures are 'cooked' can be dismissed, for Dr. De Porte, one of the world's foremost statisticians, could not be misled that way. We must accept the Russian figures as reasonably accurate, and those of Moscow as beyond serious criticism."

Wage-earner Health *Law and Labor* for September 1928 carried material by Harold A. Ley saying industry must solve the problem of sickness among workers. The Life Extension Institute then said that the cost of preventable illness and death among the gainfully employed in the U. S. was $1,800,000,000 a year. Health supervision, Ley said, would add but one and one-half percent to pay rolls and he suggested 50:50 contributions by employees and employers to foot costs, the funds to be handled by a mutual benefit association investing in a group health insurance policy.

Historical Papers *Science* for May 3, 1929, carried a note by Drabkin and Waggoner, of the University of Pennsylvania School of Medicine, on recent work by Whipple and associates. Drabkin et al had tried a synthetic diet on experimental animals in health to see whether hemoglobin was maintained—the Karr-Cowgill ration for dogs (*Journal of Biological Chemistry* 56 1923 725.) Meanwhile Hart and his associates had been publishing papers showing the importance of copper in the diet of anemic rats otherwise exclusively on milk. Upon analyzing their synthetic ration for copper, Drabkin et al found this metal in the casein and in the source of vitamin B, though not in the salt mixture. These were eliminated and a copper-free synthetic diet was then devised. With that they claimed to cure severe anemia in rats. They said: "Indeed anemias of various types have come to be regarded (perhaps uncritically) as problems in nutrition." (What do you think of that?)

Science and Medicine There was a fine discussion of the subject in *Science* for May 3, 1929, by G. Canby Robinson of New York Hospital-Cornell Medical Association. It had been an address before the section on Medical Sciences of the American Association for the Advancement of Science meeting in New York, December 1928. Robinson said, among other things, "The enormous following given to 'healers' who make no use of the application of science in the usual sense testifies to the fact that human needs may at the present time be satisfied by systems of practice that have no basis in the natural sciences. Every intelligent person, however, recognizes the fact that although science is not related to many of the methods used by physicians and 'healers' in alleviating human ills, scientific knowledge should reign supreme in the great problem that forever presents itself to the human race, namely, of making man more comfortable, a happier and more efficient being and of waging a continuous battle against disease. If scientific knowledge does not today fulfill all that it should in the practice of medicine where does the fault lie?" The discussion is very suggestive and readable but too long to quote or abstract here. Robinson considers why practice always lags behind available science, why the various activities of physicians prevent them from really keeping up with science, and other points of as great interest today as when the address was prepared and published.

More History Liver was used as a substitute for insulin at the Peter Bent Brigham Hospital in Boston, by Drs. Harry Blotner and William P. Murphy, according to *Science* for May 3, 1929. Hitherto liver had been excluded from the diet of diabetics because of its glycogen content, but now it developed that patients permitted to consume it showed low sugar, so they were given it in place of insulin injections! Analyzed chemically it was said that the fractions effective in treating pernicious anemia had no effect on blood sugar, though certain fractions ineffective in anemia did affect the blood sugar level quite like whole liver.

Food and Nerves These days of world famine some work by Max and Grete Seham, reported in the *American Journal of the Diseases of Children* (37:1929:1), takes on new significance. They said that functional disturbances, overactivity, fatigue, and restlessness, had been too much overlooked by common mechanistic medicine, while height-weight standards for children had been overvalued. Poorly nourished rats markedly increased in activity, this excess activity disappearing on a normal diet. A questionnaire into the living habits of 100 normal and 100 malnourished children showed that the latter had poorer health habits generally and only one-third the efficiency of the normals, with marked fatigue and restlessness. Increased functional capacity, improvement in nervous symptoms, and gains in weight resulted when high feeding and forced rest were introduced. Deleterious emotional factors disappeared. Others had shown that high-protein diets, as high as 4 grams per kilo per day, were especially beneficial to undernourished children, and the addition of milk to the diet had an excellent effect because of the high-quality protein introduced. This reminds us that we heard Sir John Boyd Orr, now head of the UN Food and Agriculture Organization, tell once how restless and quarrelsome he found undernourished children in Scotland. He could tick them off by their hyperactivity.

The Critic

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Feinberg, S. M.: Allergy in Practice, Chicago, The Year Book Publishers, Inc., 1944, p. 502.

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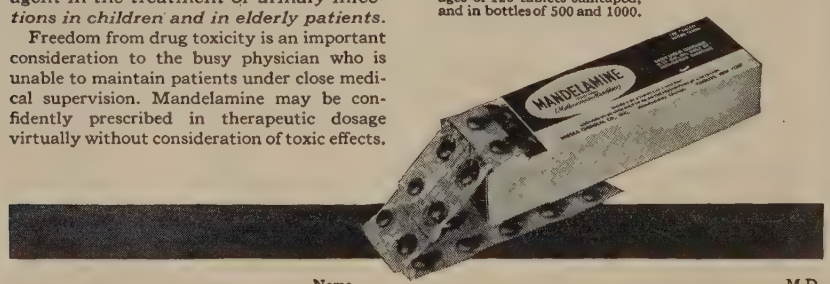

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Lessons from the War

J. H. Palmer, M.D., F.R.C.P. (Canada and London), assistant professor of medicine at McGill University, Montreal, said, at a meeting of the American Pharmaceutical Manufacturers' Association, held recently at Lake Louise, Canada, that one of the greatest lessons learned from the war was the recognition of the tremendous importance of psychiatry. He explained at length the effect of the war on the doctor in service, and through the uncovering of psychic disturbances, he pointed out, the medical officer learned how large a percentage of the civilian population are potential psychiatric casualties. The service doctor's psychiatric training augurs well, he believes, for postwar medicine.

In connection with research on new drugs, Dr. Palmer told the pharmaceutical manufacturers that he thought a good many medical officers knew that most of the fundamental research on the newer drugs was being done by the various pharmaceutical and chemical houses which are becoming more and more responsible for initiating therapeutic advances. However, he said, they did not so well know about the close liaison existing between the leading pharmaceutical houses and the universities and of the support given by these firms to hospitals and universities for research purposes and scholarships.

In concluding his remarks, Dr. Palmer said that he believed the medical officer had become more mature and more serious minded as a result of his war experiences, and that these experiences had fitted him for the high place which he was bound to assume in the profession.

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Plans for Medical Research Center

Proposed plans for an Army Medical Research and Graduate Training Center, to be located at Forest Glen, Maryland, were outlined recently by Surgeon General Norman T. Kirk, U. S. Army.

Such a center he said, would consolidate Army research activities, and information gleaned in all Army laboratories now scattered throughout the United States and Panama would become available at the center. Rare maladies encountered would be subjected to expert civilian and military scientific study as patients suffering from such diseases would be transferred to a one thousand bed general hospital which will be established in the center for clinical observation.

General Kirk expressed a desire to have the general hospital and the Army Institute of Pathology erected first, with other buildings to follow. Other proposed installations are an Army Institute of Research Medicine and Dentistry, Army Institute of Research Surgery and Radiation Therapy, a school of global medicine, and an administration building.

Forest Glen, which is near District of Columbia and adjacent to Rock Creek Park, is large enough to accomodate the proposed center in the present and future. All research installations could be housed there and living quarters maintained for military scientists who might be employed under United States Civil Service ratings. Further, garrison life would be possible with a parade ground and other military requisites available.

General Kirk emphasized that the proposed center was still in the planning stage and had not received War Department approval.

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1 Gross, R. E., Elective Pediatric Surgery. Clinics 2:363-379, 1943
2 Sevringhaus, E. L., Endocrine Therapy in Adolescence. West J. Surg. 51:153-164, 1943.

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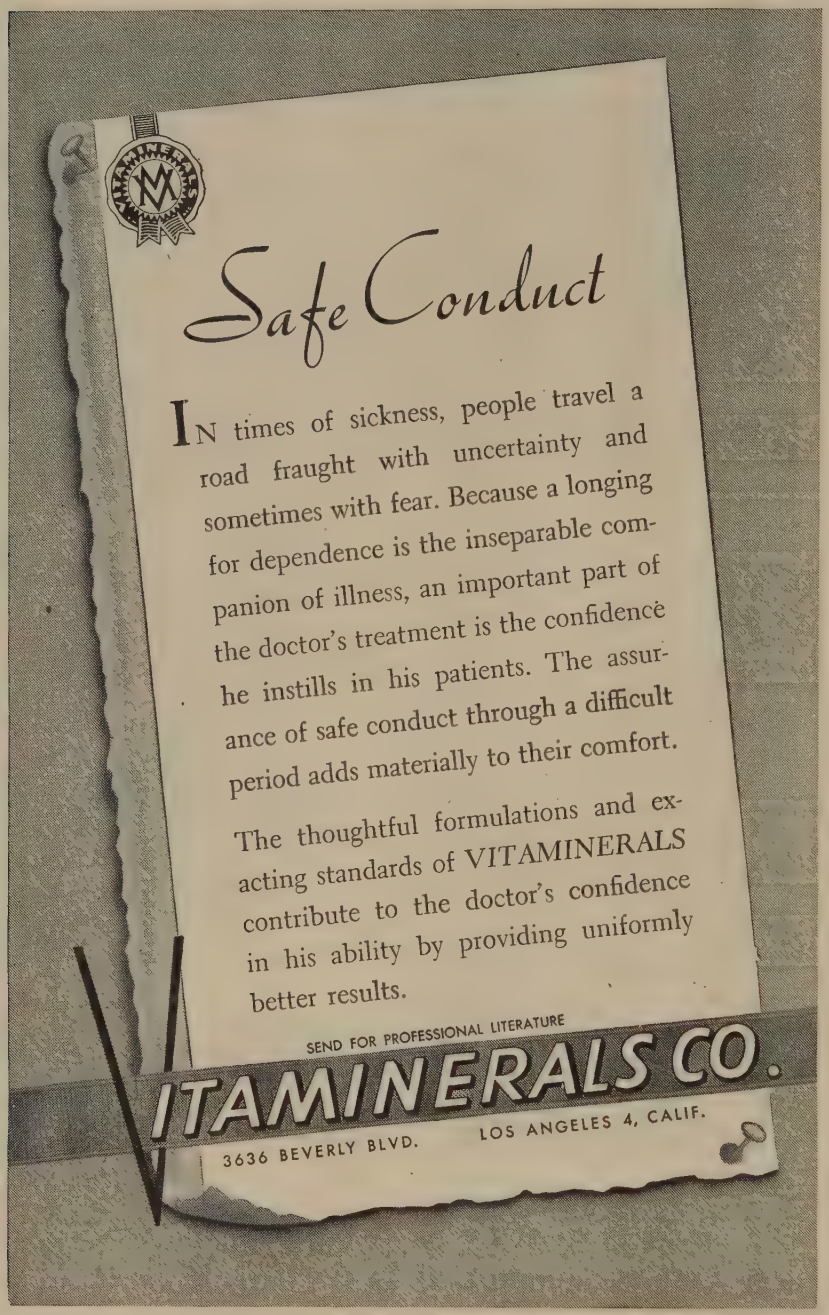
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Decline in Mortality from Poliomyelitis

Although there have been periodic epidemics of poliomyelitis the trend of mortality from this disease has been downward in the past thirty-five years, says the *Statistical Bulletin* of the Metropolitan Life Insurance Company. This is evident from a study of the annual death rates from this cause during the period 1911 to 1945 among children one to fourteen years of age insured in the Industrial Department of the Company.

Girls have benefited more than boys from the improvement in mortality among white children. In the period 1911 to 1915 the standardized death rates at ages one to fourteen were practically identical for the two sexes — namely, 3.8 per 100,000 for white girls and 3.9 for white boys. For the period 1941 to 1945, however, the death rates among the girls were on the average, half those for the boys, the figures being 1.1 and 2.2 per 100,000, respectively.

In each sex, the improvement in mortality has been concentrated almost altogether among children under five years of age. Among white boys at ages one to four the death rate from poliomyelitis dropped from 9.5 per 100,000 to 1.1 between the initial and final five-year periods; among white girls the corresponding decline was from 9.3 per 100,000 to 0.9. The death rate among girls at ages five to nine has also been reduced somewhat. At all other ages, in both sexes, the mortality has fluctuated without a definite trend. As a result of these differences the peak of mortality has shifted from the age group one to four years to five to

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nine among white boys, and ten to fourteen years among the girls.

Continued research is required in the epidemiology of the disease before it can be brought under control, as have been the more common infections of childhood.

Conquest of Typhoid Fever

Since the turn of the century typhoid fever has dropped from its position as a leading cause of death to one of negligible importance numerically, according to the *Statistical Bulletin* of the Metropolitan Life Insurance Company. In 1900 the death rate from typhoid and paratyphoid fever in the United States was in excess of 30 per 100,000; in 1944 it was only 0.4, a decline of ninety-nine percent. There are many large cities which have not had a single death from this cause for a number of years.

Marked progress has likewise been made in reducing the prevalence of the disease, particularly in the past decade. The case rate from typhoid and paratyphoid fever dropped fully seventy-five percent in the country as a whole between 1934-1935 and 1944-1945. Whereas only ten years ago there were well in excess of twenty thousand cases a year, at present there are about five thousand annually. Moreover, the effort to suppress the disease has been highly successful in every area of the country. These remarkable results have followed upon a variety of measures, such as installation of sewer systems, the supervision of typhoid carriers, the inspection of food supplies, the examination of food handlers, antityphoid inoculation, the adoption of central water supplies, and, above all, filtration and chlorination of these supplies.

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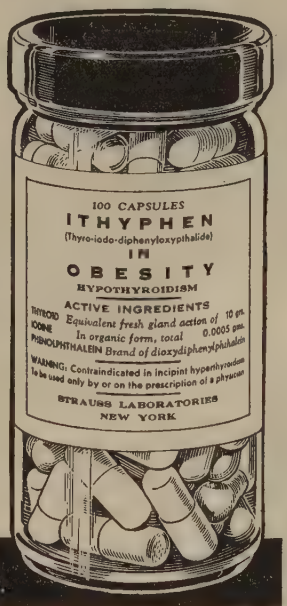

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New Protein Product Announced by Wyeth

Lactamin, a new oral protein digest product containing all of the amino acids essential for maintaining the body at proper protein level, has been announced by Wyeth Incorporated, of Philadelphia. The new product is made from lactalbumin of milk, one of the proteins most perfectly supplied with the essential amino acids, is a highly-concentrated palatable protein digest in powder form for oral administration. It is used to restore blood protein and tissue protein after operations, childbirth, shock, serious burns and injuries; and also in a host of infections, diseases and chronic ailments, including cancer, liver, kidney and thyroid diseases, and in ulcers and allergies—in all conditions, in short, where disturbance of the body's protein metabolism has seriously affected its normal protein intake and reduced its level of supply.

Lactamin is a free flowing palatable powder, readily soluble in water, packaged for convenient oral consumption in the hospital or home. It is prepared from the protein lactalbumin by digestion with pork pancreas glands, thus paralleling closely the processes of digestion which take place in the human digestive tract. Moreover, whereas most commercial protein hydrolysates are made from casein, Lactamin, since it is prepared from lactalbumin, the soluble protein of whey, is richer in methionine plus cystine than casein. A comparison of the amino acid contents of lactalbumin and casein shows lactalbumin to excel in leucine-isoleucine, lysine, tryptophane and cystine. Lactamin, therefore, derives its advantages both from the fact that it is made from a superior protein and from the fact that it is obtained enzymatically.

Lactamin, given orally, or by tube (it is not for parenteral use), permits administration of as high as 150 or more grams of protein daily by itself or in conjunction with a more or less normal diet—and since the normal food requirements of the body include carbohdyrates, fats, vitamins, minerals and water, these latter elements must be included in any comprehensive protein nutrition program if the digest is to do the work for which it is so eminently fitted: maintaining the body's protein level.

Sulfonasol

The National Drug Company, Philadelphia, Pa., announces this new product, and recommend it especially for infants and children, for adults who are medicine-conscious, and for all who require a prolonged course of sulfonamide administration. The presence of microcrystalline sulfadiazine, one of the most valuable of the sulfonamide drugs, makes possible a broader therapeutic range of high bacteriostatic effectiveness. Sulfadiazine is also more advantageous than other sulfonamides from the viewpoint of absorption, blood concentration and penetration into body fluids. This means that more dependable concentration levels are maintained. Sulfonasol is a pleasant-tasting, aqueous mixture of microcrystalline sulfadiazine. Its outstanding palatability, inviting appearance and odor, and ease in administration make it the sulfonamide preparation of choice.

Sulfonasol contains in each fluidounce approximately two grams (thirty-one grains) of microcrystalline sulfadiazine in a specially prepared vehicle with flavoring, sweetening and coloring agents. It

is indicated as an aid in the prevention and control of infections susceptible to the action of sulfadiazine and especially in those conditions caused by hemolytic streptococci, pneumococci, gonococci and meningococci.

Average dose: In children, the initial dose for pneumonia is 0.10 to 0.15 Gm. of sulfadiazine per kilogram (2.2 lbs.) of body weight. Subsequent doses are one-fourth of the initial dose given at intervals of six hours until the temperature has been normal for at least forty-eight hours. For other dosage, the physician will be guided by the fact that each tablespoonful (four teaspoonfuls) of Sulfonasol contains 1 Gm. (15.4 grains) of microcrystalline sulfadiazine. The exact dosage of sulfadiazine for prophylaxis has not been fully determined. The following is suggested: For infants and children, one teaspoonful once or twice daily; for older children and adults, two teaspoonfuls twice daily.

Sulfonasol (Sulfadiazine Mixture "National") is available in four fluidounce and pint bottles.

New Products Announced by U.S. Vitamin Corporation.—Three new nutritional products have been announced by the U.S. Vitamin Corporation of New York, N.Y. These are:

Amiprote, which is a protein hydrolysate for oral or orojejunal administration, prepared by enzymatic digestion of beef, lactalbumin, casein, and yeast. It contains all amino acids. Among the advantages claimed for Amiprote are (1) multiplicity and completeness of proteins, (2) animal proteins known to be utilized more readily than plant proteins, (3) enzyme hydrolysis as preferable to acid digests, (4) high protein value in small bulk, and (5) exceptional palatability. Amiprote is indicated in hypoproteinemia, pre- and postoperative feeding, pregnancy, peptic ulcer, shock, anemias, malnutrition, etc.

Desiver, which consists of desiccated whole liver, each tablet derived from 2.5 Gm. of fresh, whole liver. As an adjunct to complete therapy of nutritional deficiencies. Contains all known, identified, and unidentified natural B complex vitamins.

Phoscaron and Phoscaron-D, which are designed for the prevention and treatment of important mineral deficiencies. Phoscaron tablets supply Dicalcium Phosphate, and Ferric Phosphate; Phoscaron-D the same ingredients, with vitamin D.

Estinyl Council Accepted

Estinyl, Schering's ethinyl estradiol, the most potent oral estrogen known today has been accepted by the Council on Pharmacy and Chemistry, A.M.A. Estinyl is marketed by Schering Corporation, Bloomfield, N. J. With dosages being measured in hundredths of a milligram, this uniform potency results in economy to the patient. It has proved of great value clinically in estrogenic deficiencies in the female, as in postmenopausal states. It is also used in the male to palliate the symptoms of metastatic prostatic carcinoma. Estinyl is supplied in tablet form, in 0.05 mg. or 0.02 mg. strengths, in bottles of 100, 250 and 1,000 tablets.

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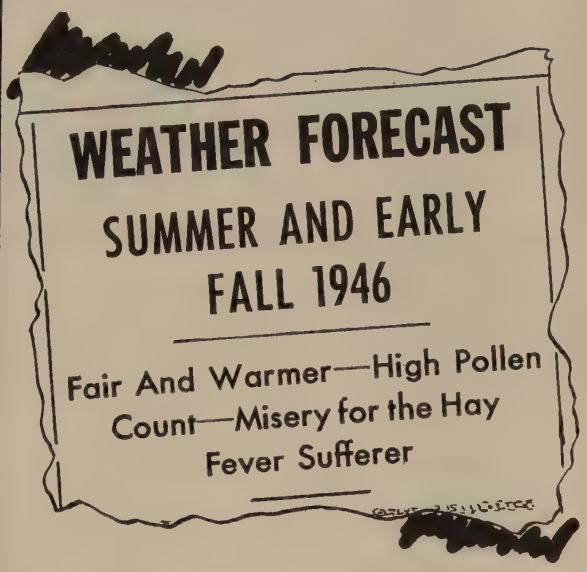

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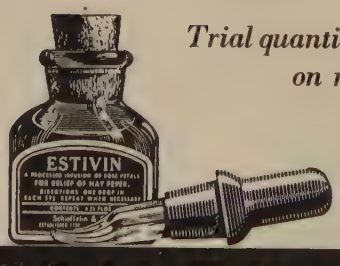

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Medical and Surgical Accomplishments in the Mediterranean Theater of War

According to a release from the Surgeon General's Office, Washington, D.C., many advances in the surgical management of the wounded were accomplished in the Mediterranean Theater of War. Among the most important of these are:

Demonstration that surgery in an overseas theater is not a crude departure from accepted surgical standards, but a development of the science of surgery to carry out a specialized and highly significant mission.

Establishment of continuity of professional policies that govern the management of the wounded soldier from the time the missile strikes to the complete repair of the damage it has caused.

Assurance that by proper placement of specialized personnel, wounded American soldiers were under the care of qualified surgeons with a background of long training and experience.

Demonstration that the essential of wound treatment are found in prompt emergency treatment, complete initial surgery and early reparative surgery.

Introduction of the concept of reparative surgery—a new and far reaching concept of wound management.

Initiation of the transfer of selected cases of the most seriously wounded to a surgical (field) hospital adjacent to the divisional clearing station and established the conditions essential to the highest standards of surgery at this forward point.

Provision for prompt and expert surgical treatment of the lightly wounded combat soldier within the Army area and thereby maintaining the strength of the fighting force.

Clarification of the nature of shock in wounded men and demonstrating that an adequate supply of fresh whole blood for resuscitation from shock is essential to forward surgery.

Designation and training blood procurement and distribution organizations that have provided over thirty-five tons (net weight) of whole blood from within the theater and distributed it to Army without known error, mishap or spoilage.

Introduction of the new agent penicillin into large scale use in military surgery as a potent adjunct to wound management.

Elimination of the scourge of infection as a common complication of war wounds.

Development and standardization of effective, comfortable and safe methods of transportation splinting.

Reduction of the incidence of crippling and permanent disability in wounds of major joints and bones by early and radical operative treatment combined with penicillin.

Demonstration of the effectiveness of toxoid inoculation in eliminating tetanus as a complication of wounded and dispelling the fear of gas gangrene as any but a rare complication.

Change of the focal center in wounds of the chest from the treatment of septic complications of these formidable injuries to rapid and complete reexpansion of the lung and early restoration of functional integrity of the respiratory system.

Reduction of the mortality rate and incidence of complications in all special fields of surgery—abdominal, craniocerebral, axillo-facial, etc.

Pioneering in the large scale evacuation of wounded by C-47s, establishing thereby a close link between forward and rear hospitals.

Introduction of sodium pentothal as one of the three most important anesthetic agents of military surgery by a clear definition of its limitations and a reduction in the hazards that initially attended its use.

Standardization for military use a simple, comfortable and effective treatment for burns.

Demonstration of the effectiveness of preventive measures in the incidence of trench foot.

Promotion of early rehabilitation and return to duty by efficient organizational changes and emphasis on this important phase of wound and injury management.

Collection and recording of technical data at all times and transmitting them to the War Department for the guidance of new theaters of operation.

In the field of medicine, the most outstanding advance in the Mediterranean Theater was made in respect to the recognition and treatment of infectious hepatitis, the disease commonly known as "jaundice." Discoveries regarding the disease included: 1, tests which enable early diagnosis; 2, importance of absolute bed rest in treating the disease; 3, the curative influence of a diet in which beefsteaks and reconstituted dried skimmed milk predominate, and 4, the effectiveness of a stiff exercise intolerance test in determining whether a cure had been effected.

In the Mediterranean Theater the Medical Corps was confronted by a malignant type of malaria long known for its severity. During 1943, one of every seven hundred patients ill with malaria in the theater died, but the problem had been brought under control to the point where the death rate was only one in fourteen thousand patients during 1944.

Dysentery, which always becomes a problem when large bodies of troops are placed in poorly sanitated areas such as those encountered in the Mediterranean Theater, was controlled to a large extent, the disease in most instances being quickly cured by administration of the proper sulfa drug. The chronic and debilitated cases of this disease which were so common in the Middle East in the first World War have not been encountered in this theater.

Sulfa drugs also were used to hold in check the ravages of streptococcal tonsillitis, pneumonia, meningitis and other infectious diseases. There were no severe or crippling outbreaks of these diseases, and relatively few reactions to the drugs.

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Amino Acids

At the thirty-ninth annual meeting of the American Pharmaceutical Manufacturers' Association, held in Chateau Lake Louise, Canada, last June, Dr. Sidney W. Fox, assistant professor of chemistry, Iowa State College, delivered an address on amino acids in which he pointed out that the general interest in amino acids could be attributed to the fundamental fact that the amino acids were the constituents of protein. Biochemical research during the last two decades, he continued, had shown that proteins were most intimately associated with living processes; hence the amino acids seemed certainly destined to have increasing pharmaceutical importance.

Individual amino acids could be prepared from proteins, or by synthesis, he said, and each type of preparation had its particular advantages. The isolation of amino acids from natural materials was the method of choice when the product sought was a mixture of amino acids suitable as a nutritional substitute for protein. He stated that it would probably be some time before a synthetic mixture could hope to compete economically with protein hydrolyzates for this purpose. He pointed out that this utility was the single development which had so far received the most attention in the amino acid field. It had recently been shown that the addition of appropriate factors (strepogenin) might render an amino acid mixture more nearly equal in nutritional value to a whole protein.

Besides their uses in nutritional mixtures, amino acids had value as individual substances. Cystine, used as an intermediate in the synthesis of biotin, and histidine for treating peptic ulcers, were examples. Research was being carried on to determine specific amino acid deficiency symptoms. In his laboratory, he said, it had been found that right-handed amino acids and simple derivatives would alone inhibit bacterial growth.

The amino acids, he concluded, are believed to be precursors not only of proteins and antibiotics, but also of vitamins and alkaloids. Chemically and biologically their fundamental relationships insured an accelerating interest in their pharmaceutical applications.

Windshield Emblems for Physicians

The Van Patten Pharmaceutical Company, Chicago, has prepared an attractive emblem for physicians to use on the windshields of their cars. These emblems are printed in black and dark red on an ivory background, and are three and one-quarter by four inches in size. They may be obtained free of charge by writing to the Van Patten Pharmaceutical Company, 54 West Illinois Street, Chicago, Ill. The emblems are for the exclusive use of phvsicians.

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Artificial Coloring of Fruits

Back some years ago the *J.A.M.A.* remarked editorially that ethylene was used primarily for the artificial coloration of oranges and lemons, as a means of evading the prescriptions of the Food and Drug Administration against the harmless artificial coloration of such fruits by means of dyes. It declared that the Administration was inconsistent in its position.

However, the Government does prohibit any sort of artificial coloring designed to simulate ripeness or to cover immature or unpalatable fruit. But mature, palatable citrus fruit often lacks the completely ripened color which can alone make it commercially attractive to consumers who believe they know when it is ripe by that color. The Food and Drug Administration did help develop the ethylene method of artificial coloration which brings out the orange color which may be masked by green in the skin of mature, palatable citrus fruit. The Administration also sees to it that the method is not used to defraud consumers.

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But to fall for that temptation is plenty dangerous. It's like trying to live in the house above—a house that might come tumbling down about your ears at the first little blow of hard luck.

Right now the best possible way to keep your finances in sound shape is to save regularly—*by buying U. S. Savings Bonds through the Payroll Plan.*

These Bonds are exactly like War Bonds. Millions of Americans have found them the safest, easiest, surest way to save. The U. S. A. protects every dollar you invest—and Uncle Sam gives you his personal guarantee that, in just ten years, you'll get *four dollars back for every three you put in!*

If you stick with the Payroll Savings Plan, you'll not only guard against rainy days, you'll *also* be storing up money for the really important things—like sending your children to college, travelling, or buying a home.

So—anyway you look at it—isn't it smart to buy every single U. S. Bond you can possibly afford!

SAVE THE EASY WAY... BUY YOUR BONDS THROUGH PAYROLL SAVINGS

★ MEDICAL RECORD ★

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